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The OIL AND GAS JOURNAL

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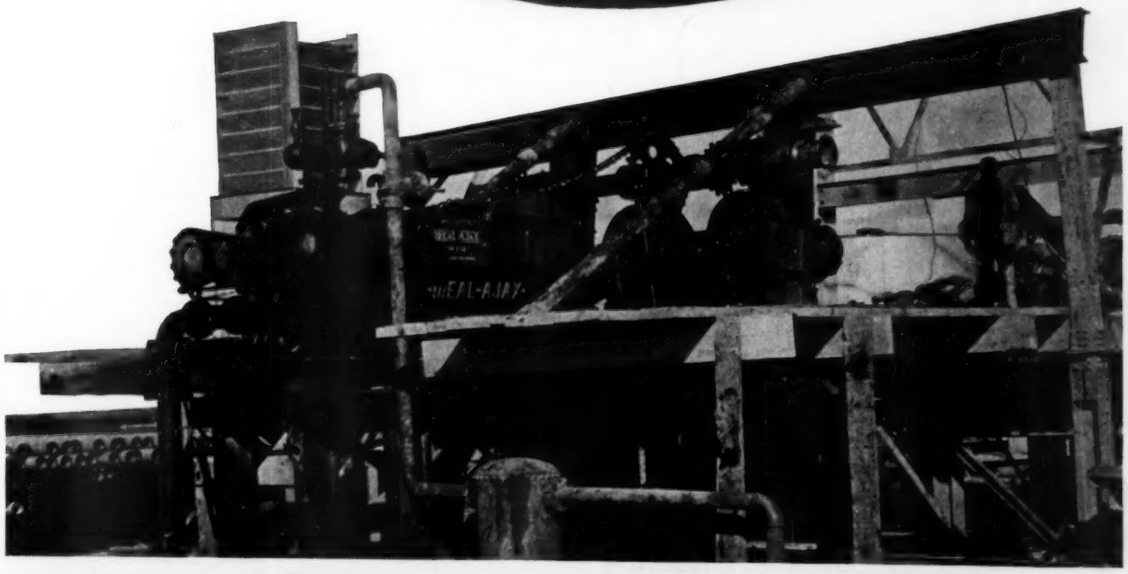

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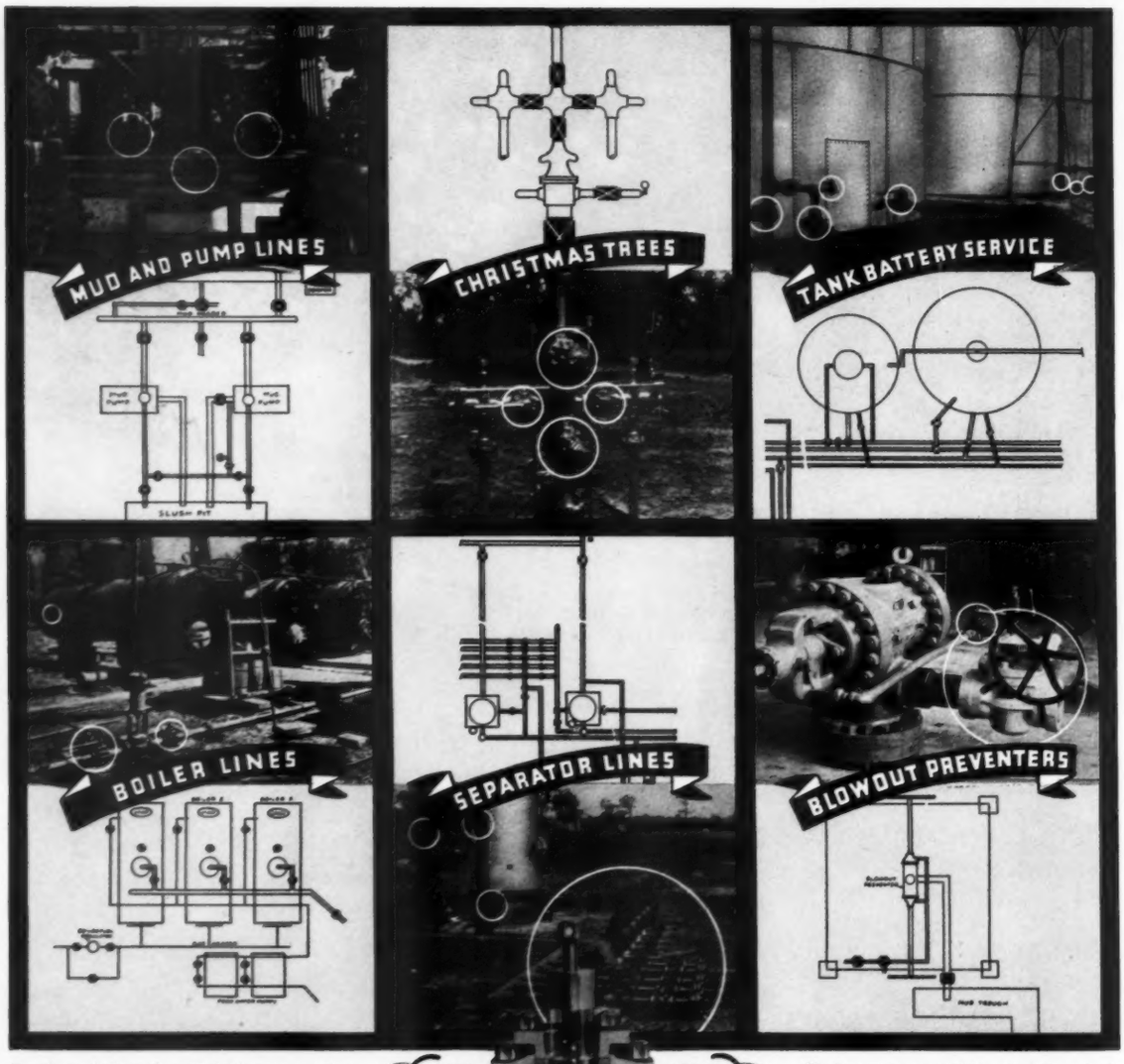

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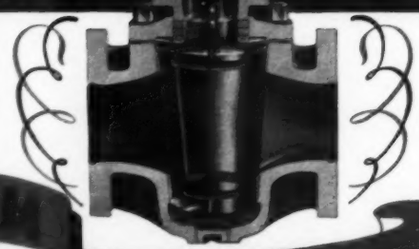

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THE OIL AND GAS JOURNAL

Volume 34
Number 5

June 20, 1935

SUBSCRIPTION RATES: Domestic, 1 year, $6; 6 months, $3. Canadian and foreign, 1 year, $7; 6 months, $3.50. All subscriptions payable in advance. When extra copies of special issues are available they are reserved for subscribers' needs and may be bought by subscribers at 50 cents each

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OIL MAN'S CALENDAR

June

20-21—State College, Pa., Pennsylvania Grade Crude Oil Association, annual meeting.

24-28—Detroit, Mich., American Society for Testing Materials, annual meeting, Book Cadillac Hotel.

August

(?)—American Petroleum Equipment Suppliers' Association, place to be named later.

19-24—San Francisco, Calif., American Chemical Society.

September

4-5—Louisville, Ky., Kentucky Petroleum Marketers Association.

18-20—Hot Springs, Ark., North American Gasoline Tax Conference.

18-20—Atlantic City, N. J., National Petroleum Association, annual meeting, Hotel Traymore.

October

10-12—Houston, Tex., mid-year meeting of Petroleum Division of A.I.M.E.

14-18—Louisville, Ky., National Safety Council, twenty-fourth annual safety congress.

14-18—Atlantic City, N. J., American Gas Association, Manufacturers Division.

14-19—Oklahoma City, Okla., National Tax Association, Oklahoma Biltmore Hotel.

16-17—Mexico City, Mexico, mid-year meeting A.A.P.G. and seventh annual meeting, San Antonio section, A.A.P.G.

20-26—Paris, France, International Congress of Mining, Metallurgy and Applied Geology.

November

4-5—Dallas, Tex., I.P.A.A., annual convention.

11-14—Los Angeles, Calif., American Petroleum Institute, sixteenth annual meeting, Biltmore Hotel.

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"OILWELL"

Steadily Mounting Crude Oil Production Halts Expected Announcements of Better Prices

By ANDREW M. ROWLEY

DESPITE the fact new high records are being established in this country in consumption of gasoline, crude oil production has been increasing at a greater rate than demand, with the result better prices have been delayed. With gasoline prices in the Mid-Continent practically in ideal balance with crude prices and the refined oil market continuing to display strength, there was every prospect that increases in crude oil prices would be announced soon. But steadily mounting crude oil production has postponed such announcements and benefits which would accrue to all branches of the business from better prices cannot be expected until crude oil production is brought to a better balance with consumer requirements.

California has been the chief offender in the matter of greater production that state recording an increase of 103,000 barrels daily since the week ending June 1 while the entire country since that date has shown a gain of 153,000 barrels daily. In addition quantities of crude oil are being sold in California at from 16 to 18 cents a barrel under the posted price. While this practice is not general there, any extension of these sales is bound to be reflected quite quickly on the posted crude oil price schedules of the major companies in California.

Part of the increase in production so far this month, however, is due to the practice of many operators in Oklahoma and California of running their monthly crude oil allowable during the first half of the month. Consequently there should be a reduction in output in these states during the last half of this month. A committee of operators in California is working on the matter of increased production and is hopeful of correcting the situation soon.

Overproduction in East Texas is being held at a minimum, estimates on "hot" oil output being from 25,000 to 30,000 barrels daily. A careful survey of operating conditions in that field shows orderly development is now the order of the day and that the period of speculative drilling has largely passed, thereby giving the entire industry assurance for the first time that the field is being controlled and that there is no longer the fear that it may suddenly "blow off the lid" and wreck markets.

Field developments during the past week show drilling activity continuing at a high level. There were 26 new locations staked in the Fitts Pool in Oklahoma while large producers continue to be completed in the Edmond Pool in Oklahoma County. Michigan operators are centering their attention to the northwest of the Crystal well since dry holes have been drilled on other sides of the discovery. Another prospective new pool was opened in Rice County, Kansas, when a wildcat there showed a hole full of oil.

Crude Oil Production in the United States

Estimated daily average production for the week ending June 15, a comparison with previous week and the Federal recommendations follow:

	June 15	Federal recommendation June	June 8
Oklahoma—			
Oklahoma City	168,725	.....	143,800
Seminole-St. Louis	104,425	.....	95,950
Remainder of State	259,075	.....	247,925
Total Oklahoma	532,225	514,200	487,675
East Texas—			
Lathrop	167,739	.....	163,820
Kilgore	154,328	.....	155,224
Joiner	153,676	.....	152,737
Total East Texas	475,743	.....	471,781
West Texas	146,534	.....	153,397
North Central Texas	91,907	.....	84,834
Texas Panhandle	55,772	.....	54,827
East Central Texas	49,465	.....	50,350
Gulf Coast—Texas	182,346	.....	178,543
South Texas	59,868	.....	59,138
Total State of Texas	1,061,635	1,059,300	1,052,870
Kansas	148,875	154,300	142,100
North Louisiana	22,965	.....	22,940
Gulf Coast—Louisiana	115,208	.....	110,947
Total Louisiana	138,173	132,300	133,887
Arkansas	30,770	30,700	31,080
Eastern Fields (except Michigan)	105,000	103,700	107,000
Michigan	42,919	36,800	41,730
Rocky Mountain area	105,540	107,000	103,470
California—			
Santa Fe Springs	40,750	.....	40,750
Long Beach	75,250	.....	75,500
Mountain View	23,500	.....	20,250
Elwood	14,000	.....	12,400
Kettleman Hills	59,500	.....	53,250
Remainder of State	360,150	.....	353,350
Total California	573,150	512,700	555,500
Total United States	2,738,287	2,651,000	2,655,312

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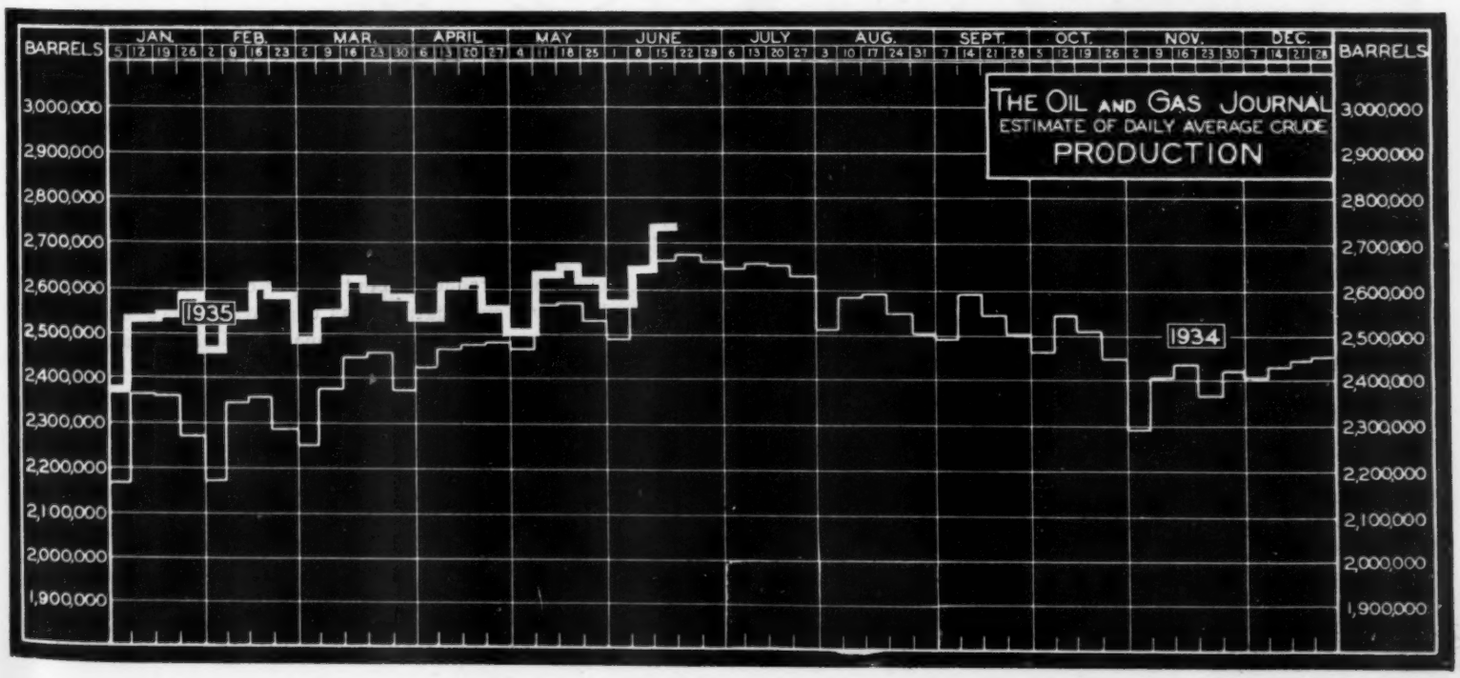


The Bulletin Board

The Thomas Bill as revised and introduced into the Senate still contains features relating to drilling operations, crude oil production and shipments and labor and wage provisions incident to voluntary industrial agreements which many legal authorities are convinced are not constitutional in the light of the recent Supreme Court decision.

•

Federal Taxes on gasoline, lubricating oils and pipe line transportation, due under present laws to expire June 30, would be extended for two years by action of the House of Representatives which, under a suspension of the rules, adopted the report of the Ways and Means Committee. The measure must still be acted on in the Senate.

•

Pipe Line Corrosion, a subject of extensive investigation by many companies, is being combatted by the Houston Pipe Line Co. through a special corrosion engineering department. The company uses hot coatings extensively and has obtained good results from the use of an auxiliary radio receiving set in connection with work with a holiday detector.

•

A Natural Gasoline Plant with a capacity of 15,000,000 feet daily, is being constructed by the Carter Oil Co. in the Fitts Pool in Oklahoma. This is the second plant to be located in this area and is expected to start operating October 1.

•

Lubricating Oil Qualities may be judged by a method of control which has been established whereby the degree of knocking can be measured where there is a tendency of the lubricating oil to form carbon on the head of a motor.

•

East Texas has passed through the speculative operating stage and sound engineering practices, now being employed, insure greater ultimate recovery over a long period. Of especial importance is the fact this orderly development removes the big field as a menace to stabilized conditions in that the industry is confident production will be held at a fairly steady level.

•

Manufacture of Asphalt in a unit designed and operated in a West Texas refinery has proved so satisfactory an addition to the plant is under consideration.

•

Hot Oil Production in East Texas has been reduced, estimates placing it at from 25,000 to 30,000 barrels a day. Runs to stills of refineries in the area showed a slight increase last week although refiners there agreed voluntarily to limit gasoline production in July and August to previous allocations.

C. E. Arnott, leader in marketing stabilization efforts of the petroleum industry, is so well satisfied with progress being made since invalidation of the petroleum code he does not see any immediate reason for rushing through a program of revising the Federal Trade Commission Code of Ethics.

•

Federal Legislation which does not offer adequate protection to oil jobbers and marketers was condemned in a resolution adopted unanimously at a meeting of the National Oil Marketers Association, the resolution specifically mentioning the Thomas bill.

•

Automotive Engineers, discussing their problems with refiners and natural gasoline manufacturers at White Sulphur Springs, W. Va., this week, suggest the use of some sort of classification of motor fuels according to volatility so that engines may be designed to more effectively use the gasolines available.

•

Modern Distillation Equipment requires the use of steel alloys that will resist surface corrosion in contact with the oil processed, stability and strength at high temperatures and resistance to oxidation and to oxides of sulphur in both liquid and vapor zones.

•

Moisture In Gas Lines presents many difficulties and disadvantages which may be overcome through various methods which have been devised by engineers working on the matter.

•

Michigan provides many uncertainties to producers, due chiefly to the thick blanket of glacial drift. Developments this week in the Crystal Pool area will go far towards determining the importance of this section from a producing standpoint.

•

Natural Gas Production in the Texas Panhandle is expected to be reduced about 50 per cent after August 1 when the new Texas natural gas conservation law becomes effective. Natural gasoline plant operators will curtail their production also to the extent of about 50 cars daily.

•

Ownership In Place was established as a definite factor in the recovery of oil from an underground reservoir by a decision of the Supreme Court of Texas which stated "experts can determine approximately the amount of oil and gas in place in a common pool and can also equitably determine the amount of oil and gas recoverable by the owner of each tract of land under certain operating conditions."

The Real Question of the Day

—Drawn Exclusively for The Oil and Gas Journal.

Revised Control Bill To Rivet Federal Rule On Petroleum Industry

By HUGH D. MALLON
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., June 17.—Complete federal control of the oil industry is foreseen by leaders in the industry if the revised Thomas oil control bill is passed by Congress. Introduced by Senator Thomas of Oklahoma as an administration bill with the backing of the President, knowledge of its contents was denied by President Roosevelt.

Rumors of a presidential message to Congress on oil, floating around for several weeks, have not yet been fulfilled, with the possibility they may not be. Conferences with congressional leaders interested in oil have taken place, but nothing tangible has come out of such conferences except the inference of the President that he does not favor the Thomas bill as reported to the Senate by the Committee on Mines and Mining.

The revised bill introduced by Senator Thomas is supposed to be designed to meet the objections of the Supreme Court to some of the provisions of the original bill, but the best legal authorities who have commented on the subject are of opinion the measure still does not conform to the principles laid down by the court in its sweeping decision on the N.R.A.

Federal Control

The Petroleum Administrative Board which would be set up to administer the proposed law would be composed of five members under the jurisdiction of the Secretary of the Interior. This, it is anticipated, would mean the continuation in office of the present Petroleum Administrative Board. The acts of the board would be subject to the general supervision of the Secretary of the Interior, although he would not be a member of the board. From the wording of the law, it may be deduced the secretary would have veto power over any of the acts of the Petroleum Board.

It is provided that the board shall cooperate with the various state agencies, and with an agency created under the terms of the interstate compact agreement. Rules and regulations shall be reviewed and approved by the Secretary of the Interior before becoming effective, as shall any findings by the board in regard to the development of pools or fields, any determinations of fact, the setting of quotas in interstate commerce, the amount of imports which may be allowed, and the permission for parts of the industry to enter voluntary agreements.

A Petroleum Advisory Committee chosen from the industry is proposed to be set up under the act. No authority whatever would be vested in this group, all power being reserved for the new Petroleum Administrative Board. The committee could make recommendations to the board, but could not exert any influence on the board to approve such recommendations.

The committee would be authorized to assist the board in promulgating agreements within the industry for promoting fair trade practices and bettering labor conditions, but would have no hand in the administration of these agreements

To provide for the orderly, scientific systematic development of "pools and fields," and it should be noted that the provisions extend to all fields and not just new fields, the board is authorized to approve voluntary agreements between and among persons engaged in the petroleum industry or plans for the orderly, systematic and scientific development of fields or pools where it finds after hearing that such agreements or plans will protect interstate or foreign commerce, prevent waste, or aid in providing for the support and maintenance of the Army and Navy.

The definition of a field or pool, as stated in the bill, is any "commercially productive accumulation of crude petroleum in its natural reservoir." It is further provided that when any agreement or plan has been executed and approved by the board, if the board has "reason to believe that any person is engaged in drilling or other activities affecting said field or pool which disrupt or threaten to disrupt the effective operation of the agreement or plan incorporated therein," a hearing shall be called by the board and if found by the board that the activities do not agree with the program outlined a cease and desist order shall be issued against such operator.

It was almost universally agreed that the least legal provision of the oil code under the N.R.A. was the new pool development plan, yet the same provision, with considerable elaboration, since it takes in not only new pools but old ones as well, is incorporated in the proposed bill. While oil operators generally are willing to go along with plans for orderly development, it is a matter of law they cannot be compelled to do so.

Federal Allowables Rule

The conservation which the bill attempts to delineate is based in almost all the provisions of the act on "market demand." In setting state production quotas, which are not mandatory but which will be enforced as quotas in commerce, if the states exceed the amount set by the federal board, the board shall consider the reasonable market demand for petroleum in the United States, and that part of the demand which should be the reasonable market demand from each producing state. The board would also be empowered to determine the quantity required from current production to supply such demand, the inference being that it could also have authority over withdrawals from storage.

In any state which has no regulatory body the power is given to the board to allocate production to individual fields, pools and wells, as well as to regulate withdrawals from storage or other source of supply. Such determinations shall be based on an equitable and ratable taking by each producer from a common source of supply, unreasonable discrimination in favor of any one source of supply being prohibited.

Quotas in Commerce

Quotas in commerce, it is provided in the bill, may be invoked whenever "the production of crude petroleum in any state exceeds the reasonable market demand therefor, as determined under this act, and the board after hearing expressly finds that such excess supply or production directly and injuriously affects commerce among the several states or with foreign nations, and causes waste, the board shall prescribe quotas of crude petroleum for movement in commence in such manner and to such extent as will limit the movements of petroleum in commerce to the reasonable market demand as determined by the board, but shall limit its quotas as prescribed hereunder to such particular areas or particular sources of supply as it finds necessary in fairly accomplishing the purposes of this act to balance supply with demand and to prevent waste."

The Connally Act, passed by Congress to take the place of Section 9 (c) of the Recovery Act, would be made permanent by the Thomas bill, if passed. All functions delegated to the President under the Connally bill would, if the Thomas bill is passed, be handed over to the Secretary of the Interior and administered by the Petroleum Administrative Board. All orders promulgated by the President would remain in force and effect, unless and until amended by the Petroleum Board.

The scope of the Connally law, however, would be enlarged to include not only petroleum and its products which are produced in excess of state allowables, but also any oil produced in excess of the allowable set by the Petroleum Administrative Board. This enlargement of the scope of the original act is contained in the following: "Any petroleum, or any constituent part thereof moved or to be moved in commerce in violation of the provisions of this act, including any quota prescribed pursuant to Section 7 (covering quotas in commerce) shall be considered contraband oil and subject to the provisions of the said act of February 22, 1935."

This provision, taken in conjunction with another provision of the bill which provides for quotas in commerce for those states which have no regulatory board and for the establishment of quotas in those states which do have such a body but which agency, in the opinion of the Petroleum Board, does not regulate production in accordance with the views of the Petroleum Board, gives the federal Government the right to set quotas in commerce for any state it sees fit, in the view of some members of the industry.

Import Regulations

Imports would also be limited under this bill to approximately 100,000 bbls. daily. The limitation shall apply to crude oil, refined products, and to natural asphalt, as well as to crude oil or its products imported and supplied to vessels at American ports. Bunker fuel oil for foreign vessels engaged in foreign trade will be the only exemption from this provision.

Importation quotas shall be set by the board for all importing companies, the quotas to be set in relation to the market which the individual companies can show they might reasonably be expected to command.

Provision for court review of the orders or regulations issued by the board provide for review by the Circuit Court of Appeals of the United States within the district in which the appellant is residing, or by the Court of Appeals of the District of Columbia. Review by the court may be obtained by filing in the appropriate court, within 60 days after the issuance of the order complained of, a petition praying that the order of the board be modified or set aside.

Upon being notified, the board shall certify to the court a transcript of the record upon which the order complained of was entered, which filing will confer upon the court exclusive jurisdiction to affirm, modify or set aside the order.

It is further provided that no objection to the order of the board shall be considered by the court unless such objection shall have been urged before the board. In other words, the Petroleum Board would like to have the evidence which it must contest in court placed before it in advance of its presentation in court.

The finding of the board as to the facts surrounding any particular controversy shall be conclusive if supported by substantial evidence, but there is no definition of the words "substantial evidence." If either party to the court proceeding shall apply to the court for leave to bring in additional evidence, and shall show to the satisfaction of the court that such evidence is material, as well as that there were material grounds for the failure to put such evidence forward at the hearing before the board, the court may take such additional evidence, but the board is also allowed to modify its findings by reason of the additional evidence brought forward. An appeal from the decision of the Circuit Court of Appeals would be taken directly to the U. S. Supreme Court.

Penalties

Enforcement of the orders, rules and regulations of the board will be by injunction in the appropriate U. S. District Court. Such injunctions may be either mandatory or otherwise, whichever happens to fit the individual case.

The penalties for violation of this act have been changed from the original bill introduced by Senator Thomas. It is now proposed that a fine of $2,000 be assessed, and/or six months in jail for violations, the original bill laying a fine of $1,000 and one year in jail.

Voluntary agreements "whereby non-integrated or semi-integrated producers, refiners, and marketers may compete in their operations on a fair basis with the producing, refining and marketing units of integrated organizations in the oil industry, or whereby such non-integrated or semi-integrated producers, refiners and

(Continued on Page 32)

East Texas Oil Field Insured of Long Life By Good Engineering

By L. G. E. BIGNELL
Petroleum Engineering Editor

Along the shores of Lake Davernia in the East Texas oil field

TYLER, Tex., June 17.—A recent trip through the East Texas Field, preceded by interviews with production engineers and others working for companies having large interests in this area, has given the impression of greater orderliness in the handling of all details having to do with production and refining of oil from the wells there than was anticipated a short time ago.

This impression is strengthened by a review of the statistics on the field and a study of the methods being followed in drilling and producing. Geologists are in accord on major points concerning the character of the producing formations. Production men have taken their clues from the information provided by the geologists, and from the laboratory work of many specialists and investigators and have adopted methods of drilling and producing that insured long life for the wells and large ultimate yield.

The source of energy moving the oil to the wells has been finally established as existing in the vast body of water contained in the Woodbine sands lying to the west of the field. As the pressure is reduced upon this formation expansion of the water within the pores of the sands furnishes energy that is pushing the oil to the points of low pressure established at the wells.

This study has determined the proper rate of withdrawal of the oil from the field as a whole and this fact has been finally accepted by practically all operators in the field and is being followed so that in effect this has become a vast unit operation. There are, however, exceptions to all rules and therefore there are still a few producers in East Texas who are not following the proration orders strictly but the quantity of oil they are producing in excess of allowable is not more than 4 per cent of the total production, or less than 18,000 bbls. per day in addition to the 440,000 bbls. daily allowable production for the whole field.

At this time there are about 17,650 wells in the field which now contains about 120,000 acres so the average density of wells is about 6.9 acres per well. In the London townsite area on the west side of the field there is a 50-acre tract with wells spaced .7 of an acre apart and another 100-acre piece with one well for each acre. These hot spots have probably secured more than the well's average allowable if sand thickness, saturation and porosity are considered, but where the excess oil has come from is an open question.

Water Movements

Early in the life of East Texas Field there was much discussion about salt water movement into the sand. Early wells drilled too deep into the pay formation encountered bottom water, especially along the west edge. The original water contact was established at —3,320 feet below sea level. Based upon experience gained in the Woodbine sand wells of the Mexia and Balcones Fault areas of Texas it was decided the minimum penetration into the upper portion of the pay should be the rule for East Texas and this has been the general practice since.

The average thickness of producing formation for the field is about 40 feet, with the maximum section a little over 100 feet thick and the minimum sand thickness along the east edge of the field varying from a few inches to 2 or 3 feet.

Wells in the field encountering water early in their life have continued to produce by flowing even though they make as much as 50 per cent water. It is reported that between 40 and 50 wells making water immediately upon production have each produced in excess of 50,000 bbls. of oil to date and many of them still produce oil. In these wells there has been some increase in proportion of water to oil but it is estimated it will take from three to four years more before they will be drowned out.

At this time estimates indicate not more than 12,500 bbls. of salt water is being produced in this field. This is only 2.8 per cent salt water compared with the total daily production. The disposal of this salt water is still an open question, but as the volume increases salt water disposal will become an ever increasingly important problem.

At this time many believe the salt water can be pumped back into the Woodbine formation to the west of the field where it will serve to fill the pores of the sand and aid in maintaining formation pressure. More of this problem will be discussed later.

Economic Features

When the East Texas Field was discovered by C. M. (Dad) Joiner on October 3, 1930, and wells drilled by Bateman on the Crim farm extended the area 10 miles north on December 28, 1930, and Farrel and Moncrief's No. 1 Lathrop still further north was completed January 26, 1931, the industry was not prepared to believe these three wells had opened one vast oil pool.

Because surface indications did not permit geologists to outline this pool and it required time to correlate the samples secured from the first wells drilled and some time passed before the major companies really became active. Caution was exercised by land men because of clouded titles and by geologists because of the uncertainty of the producing formation and executives were slow to authorize purchase of acreage until many independent operators and speculators had acquired considerable holdings.

General business conditions in the country at the time this field was opened had effect upon the available capital for investment here and therefore many schemes were put into operation by those who had taken a chance in this field and obligations were incurred which later led to overproduction of oil and a sharp break in crude prices.

This chaotic condition obtained until the summer of 1931 when the price of crude dropped to 10 cents per barrel following an orgy of production when more than 1,000,000 bbls. of oil were produced daily for a short time.

The great size of the field and its potential production staggered the petroleum industry for a time. Gradually order evolved from chaos and speculators acquired sufficient money to meet their obligations or were forced out of the picture and the desire of the majority for orderly production finally prevailed.

Vast as this field is in extent, now being placed at about 120,000 productive acres, its true place in the industry can best be gauged by considering its ability to produce only a limited volume of oil each day if ultimate recovery is to be obtained in keeping with the sand's ability to produce oil.

Many laws have been passed and orders promulgated by both state and federal officers. Courts have been appealed to for interpretation of these rules and laws and the results have usually been against the enforcement bodies. But in spite of it all economical conditions have finally brought about reasonable production practices and many of the former opponents of restricted production are now the most ardent champions of orderly withdrawals. Briefly the operators in this field have finally been educated to understand this pool, in spite of its size, is in reality a unit and what is best suited to meet natural conditions is best for all.

Edge Extensions

Aside from the small amount of excess oil now being produced in this field the only other speculative feature is the drilling of wells along the east and west edges of the original boundaries of the

East Texas No Longer a Menace

The East Texas Field as a whole is being developed and produced in an orderly manner at this time, based on the best engineering knowledge and practices. These facts remove much of the uncertainty regarding this area and permit the petroleum industry to plan and carry out its field programs in other sections of the United States without fear that the "menace of East Texas" will disrupt market conditions in the business.

The accompanying article, prepared by Mr. Bignell after a complete investigation of the East Texas Field and all conditions affecting development and production in that area, will be followed in the June 27 and July 4 issues of The Oil and Gas Journal by other articles covering in detail development and production, the former being the subject of the article to appear June 27 and the latter being covered in the article to be published in the July 4 issue.

These three articles were prepared for the purpose of giving the entire industry and all persons concerned a complete picture of East Texas as it is today, with all the available facts and figures which will permit an accurate analysis of any phase of the situation desired.

Field headquarters of Federal Tender Board, for East Texas Field, Kilgore, Texas

pool. There has been an extension to the northeast in Upshur County where the Woodbine formation dips sharply to the north and where the water level is found at about —3,355 feet instead of —3,320 feet below sea level.

The east edge drilling has so far been confined principally to the area south of Kilgore townsite. Many new wells have been drilled there and production found in thin sections of the Woodbine sand apparently deposited along the extreme edge of the old shoreline of the Woodbine sea.

Speculators who have been interested in this kind of production operate upon the theory that as the acreage was relatively cheap, because the area had been formerly condemned by small wells, they are justified in completing pumping wells whose allowables are set by law at 20 bbls. per day as "marginal wells." These wells cost about $6,500 to drill, plus $3,000 to equip with pumping machinery and if the lease costs $1,500 the total investment was about $11,000.

Based upon the continued daily allowable of 20 bbls. and allowing for one-eighth royalty payment the owners figure they can pay out on this investment in a little less than 20 months. Any production beyond that period would be considered net profit.

Cost of Wells

Wells in the field proper have cost about $20,000 to drill and equip for flowing to which had to be added the cost of the lease and other expenses so they can pay out in from 40 to 50 months at the present allowable rate of production.

Flowing wells in the East Texas Pool have a daily allowable of 3.4 per cent of the hourly potential. Few wells have made 1,000 or 1,005 bbls. hourly which would entitle them to a daily production of 34 bbls. The average for the field is about 27.9 bbls. daily for flowing wells. As the total number of wells finished increases this per well allowable will decrease but at not as rapid a rate as the total lease allowable increases with the drilling of extra wells.

Along the west edge of the field some new wells have been drilled and have found good producing sands in the area where salt water was encountered early in the life of the field. This indicates the lenticular character of the producing sands. They are evidently surrounded by impervious formations and even though some of these holes have been drilled to —3,320 feet or slightly deeper good oil wells have been secured.

This edge drilling offers the possibility of adding a considerable number of acres to the field. The western margin of the field is about 70 miles in length and the eastern boundary about 50 miles long giving a periphery around the field of about 120 miles. If the new wells drilled beyond this old boundary line equal the addition of but one location of width to the field, or extend the line outward 660 feet, it will result in the addition of 10,000 acres to the total area of the East Texas Pool.

This added acreage may not add proportionately to the future reserves for it is admitted the sand is very thin and the life of the wells is expected to be relatively short. On the other hand it is the consensus of opinion the water drive now in progress will force the oil from west to east and it is possible oil may be renewed in these thin stringers to the east of the field for many years to come.

This type of development is not indulged in to any extent by the larger operators and really represents about the last stand of the speculator in this region.

Speculator's Next Move

There is a certain type of operator in all oil fields who desires quick action on his money. Before the days of restricted rate of drilling and production the wildcatter operated upon the theory he was about to make a "killing," believing he would be lucky and his hopes fulfilled. Many who entered East Texas early in the life of the field held modified views of this role of the oil producer.

When they were able to make an investment in East Texas their ambition was to convert oil into cash as quickly as possible. But when the price of oil dropped to 10 cents per barrel many were convinced that was a poor policy and have since been favorable to orderly production. But such rate of securing return upon their investment cramps their style and some have sold out and taken their capital and reinvested it in other businesses or in other speculative ventures in wildcatting.

This evolution of sentiment in East Texas has finally reduced the general condition there to orderly production. The industry need not fear the East Texas Field will be a menace again for the large operators desire the reserve of oil and greatest possible ultimate recovery. They are now convinced by the studies and reports of petroleum engineers this is the only way to handle East Texas wells. Independents concur because restricted production means higher prices for oil.

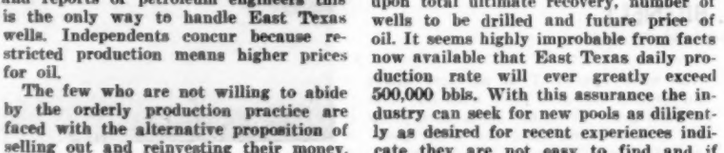
The few who are not willing to abide by the orderly production practice are faced with the alternative proposition of selling out and reinvesting their money. Some have tried the latter course and have not been fortunate in their new ventures and therefore are now back where they started.

Another group have parted with a portion of their holdings, reserving sufficient interests in East Texas to insure them an income for years to come, and have then reinvested the capital secured from the sale, believing in this way they were hedging their investments and only risking the portion which they felt they could afford to take a chance with.

These are fundamental conditions in East Texas of much more importance to the industry as a whole than speculating upon total ultimate recovery, number of wells to be drilled and future price of oil. It seems highly improbable from facts now available that East Texas daily production rate will ever greatly exceed 500,000 bbls. With this assurance the industry can seek for new pools as diligently as desired for recent experiences indicate they are not easy to find and if East Texas is not to be ruined by rapid withdrawal its place in the future scheme of things is as a producer of only a sufficient oil each day to provide its share of the daily current demand.

Rules and laws may have played their part in bringing about this condition in East Texas but it seems much more logical to attribute these conclusions to education of the industry as a whole on the advantages of orderly production. Executives for large companies were in some instances as difficult to convince that natural laws had to be observed if their investments were to be made to yield the greatest returns as were small independent speculators.

On one of the Gulf Production Co.'s leases in the Kilgore district, East Texas Field



Portion of Gladewater, Texas

Small Refineries

There are 79 refineries listed in the East Texas oil field area. A large number are now shut down because of lack of cheap oil. This is one of the best pieces of evidence of the control of production that can be observed in the field at this time. Federal and state regulatory bodies are checking tank car and truck movements daily. Over 98 per cent of all oil produced passes the scrutiny of the tender boards, either federal or state, through offices maintained at Kilgore.

The Federal Tender Board composed of Norman L. Myers, chairman, John F. Davis, M. S. McCorquodale and Victor J. Buthod, members, passes upon practically all interstate shipments. The Railroad Commission of Texas officials are checking intrastate movements of oil and its products. In this way nearly all of the oil is accounted for constantly and this practice is agreed to by most operators for it insures regulated rate of production and evades possible lowering of price of crude oil through excessive production.

In traveling through the field it is observed that all operations are standardized. Good equipment is generally used and production methods are those best suited to recovering the well's daily allowable. It is not the general practice to produce oil in excess of the well's daily allowable each day and this has required that many wells be primed by one means or another to start them flowing after each shut down period.

Drilling and production methods, as well as the general natural conditions of formations and water movements will be discussed in subsequent articles dealing with East Texas.

It has been the purpose of this article to outline general conditions as observed in this region, developed from discussions with many of the geologists and petroleum engineers who have been intimately connected with development in East Texas since its discovery. Executives for large companies with hundreds of wells, and owners of few wells, have been interviewed. The impression gained is that in general they are in accord upon major principles and all have come to realize, regardless of its size the East Texas Field is in fact a natural unit and must be treated as such if all investments are to be protected and greatest ultimate returns secured. When the majority has agreed upon basic principles those who are not in accord with those findings are closely checked as sufficient data has been accumulated and studied to permit well informed engineers to keep track of all operations and if one seeks to take advantage of the situation there are means at hand to curb desires and they are promptly enforced.

The drilling of additional wells in East Texas will continue for a long time. The majority of the wells will continue to flow their oil naturally for a long time if the present rate of production obtains, and the movement of salt water into the wells will be slow although it is admitted this presents one of the major problems for the producers in this field to solve later.

Diver and Barges Facilitate Repairs When Flood Breaks the Ajax Pipe Line

The Ajax Pipe Line Co.'s twin 10-inch pipe line running from Glenn Pool, Okla., to Woods River, Ill., was out of commission for about 30 hours last week when high waters in the Missouri River broke both 10-inch river crossings at South Point, Mo., about 2½ miles below the town of Washington, Mo. This line, which has a capacity of 65,000 bbls. of oil per day, first experienced difficulty when the No. 1, or the upstream line broke on Wednesday. Immediately after that break all oil was transferred to the No. 2 or down stream line of the crossing and it went out Friday afternoon causing a complete shut down of service.

The company was fortunate in finding a fleet of river boats equipped with pipe drivers and other heavy machinery about 20 miles up stream from the break and word was gotten to the commander of the fleet at 3 a.m. Saturday morning. He, with one assistant, got two of the barges into the stream and by 6 a.m. Saturday was tied up at the break ready to go to work as soon as the barge crew and pipe liners were assembled.

A diver was rushed from St. Louis and went into the 25 foot deep stream and followed the No. 1 line from the east shore out to about the middle of the normally dry stream bed but was unable to pick up the end of the line in the river. The work was then transferred to the No. 2 line and in a short time the broken ends of the line were hoisted to the deck of a barge and welders repaired the break and carried the line on the deck of the barge where it was suspended with the oil flowing through at full capacity.

The stream has dropped about 4 or 5 feet since the high water stage was reached and it is expected the second line will be repaired shortly. While these repairs are somewhat of a temporary character it is believed that they will hold until the river is again back in its normal channel and permanent repairs are effected.

This river crossing was completed about 5 years ago and is approximately 4,000 feet long. Heavy pipe, 10-inch diameter, is used with heavy cast steel clamps at each joint. The pipe is welded and strapped under the clamps and the lines were dragged into the stream in the usual manner. At normal stage the river does not flow close to the east shore where the break occurred, but under the exceptional high water experienced last week the water filled the whole channel from bank to bank.

Under the conditions existing at the crossing when the break occurred it has been very difficult to determine just how the two lines were broken but examination of the ends of the broken lines when they were brought to the surface of the water indicates terrific forces had been applied to the pipe lines for the break was through one of the heavy river clamps on the No. 2 line.

Future of Crystal Pool, Michigan, May Depend on This Week's Tests

By R. C. CONINE

MOUNT PLEASANT, Mich., June 17. Although a typical Michigan structure for the Crystal Pool in Montcalm County is being outlined by dry holes, geologists believe that producers of the discovery well caliber will be added late this week within the indicated northwest-southeast trend. At least three tests which have found good oil and gas showing in the Traverse formation are expected to drill in the Dundee lime at that time. The five producers in the pool are: Leonard's Durbin, 4,675 bbls.; McClanahan's Flint, 2,380 bbls.; Daily's Tow, 740 bbls.; Leonard's West, 3,531 bbls.; Eastern Gulf's Barger, 300 bbls. The last named is making about five times as much brine as oil.

Although brine analysis and other indications point to the big pay in the Crystal area being the Dundee lime, many operators say they would not be surprised if the formation should turn out to be a lower section of the Traverse, or even the deeper Monroe. Whatever the formation, the presence of a large volume brine stratum underneath is generally in evidence.

Analysis of Oil

The crude oil is light green in color and produces a gasoline of 51 octane (325° F. endpoint) A.S.T.M. by the C.F.R. motor method, and sulphur content of 0.016 per cent. The octane rating is about 12 points higher than that of the gasoline produced from Porter Field crude oil. Distillation runs for these two crudes are compared in the following table:

	Porter (per cent)	Crystal (per cent)
Gasoline	21	30
Stoddard solvent	12	10
Kerosene	15	13
Distillate	9	11
Gas oil	14	10
Fuel oil	29	27

The Crystal crude on running to 700° F. yields about 8 or 9 per cent of wax distillate, or about the same as the Porter crude. With temperatures in excess of 630° F. in a shell still a slight brownish cast appeared in steam refined material. Improved fractionating equipment, it is believed, would avert this depreciation in color. While complete tests are not available, it is understood that samples run in a Pennsylvania laboratory indicate lubricating oil stocks of considerably above the average may be produced from the Crystal crude.

Runs from Field

Pure Transportation Co. and Simrall Pipe Line Co. are taking the Crystal Pool crude oil. Latest figures show runs from the wells in the field as follows for the month of May: Durbin, Pure ran 51,779 bbls., Simrall ran 49,255 bbls.; Flint, Simrall ran 7,727 bbls.; Tow, Pure ran 3,334 bbls.; West, Pure ran 8,397 bbls., Simrall ran 8,707 bbls. The Simrall company is completing its 28-mile 6-inch pipe line from the Crystal Pool to the Roosevelt Oil Co. refinery in Mount Pleasant this week. This is a welded line constructed by the Franklin Tool Co. The company is also adding a larger steel loading rack at Riverdale on the Pere Marquette Railroad tracks for tank car shipments from that point. Sixteen miles of 4-inch line are being laid by Mid-West Refining Co. from the Crystal Pool to its plant at Alma. Daniels and Mast are the builders. The Pure company has a line from the Crystal Pool north to the Pere Marquette Railroad near Vestaburg, and south to the Grand Trunk lines at Carson City.

How this Crystal Field, which many fear will have an adverse effect in the Detroit, Toledo and surrounding markets, is making its mark in the state-wide setup this early is shown in the following table giving average daily production for all fields and the number of producing wells in each field in the week ending June 15:

Field—	Number of wells	Daily ave. production (bbls.)
Porter Yost	330	27,996
Chippewa Greendale	304	3,435
Vernon Leaton	96	2,621
Home Montcalm	3	200
Crystal Montcalm	5	7,178
Beaverton	1	57
Ogemaw	60	1,088
Saginaw Lapeer	98	100
Muskegon	118	309
Oceana	18	54

Development Program

There are 61 locations staked or wells drilling in the Crystal Pool area, 6 dry holes and 5 producers. The dusters are well out of the apparent pool outline as indicated by producing wells and indications based on geological data. It is a fair guess many of the locations will be abandoned after next week when some of the "trend" tests are drilled in. However, the apparent highly probable territory encompassed in the trend is large enough to make an important field in the northern areas.

After next week there will either be a sharp decline in interest in the Crystal Pool, or there will be a rush to get wells down. The indications must be good, however, as drilling in most of Michigan costs real money and presents difficulties not encountered elsewhere. Where else, for instance, is it more feasible to drive pipe from 300 feet to nearly 900 feet through glacial drift than to use the rotary and then standardize? Then, there is the acid treatment, from 1,000 gallons to 6,000 gallons initially and then periodically? And, finally, regular doses of paraffin solvent and/or brine crystal flushing?

Just at this time there is additional weight, psychologically, on the side of caution. A legislative oil investigation committee is hearing the views of operators and investors. Henry G. Hunt, secretary of the Oil and Gas Association of Michigan, testified to the committee this week that while $61,000,000 has been invested in the oil business in the State, the value of the crude oil produced falls some $20,000,000 below that figure. Mr. Hunt said that while in other fields such as those of the Mid-Continent, California, etc., the geologist was able to provide definite information as to probabilities, in Michigan a thick glacial drift blanket made surface indications of little value. Therefore, "oil development in Michigan," Mr. Hunt said, "is destined to be marked by a few spectacular discoveries along with thousands of dry holes and bitter disappointments." Mr. Hunt pointed out that there are some 1,500 dry holes in the State and 1,000 producing wells.

W. R. Mook Elected President of Standard Oil Export Corporation

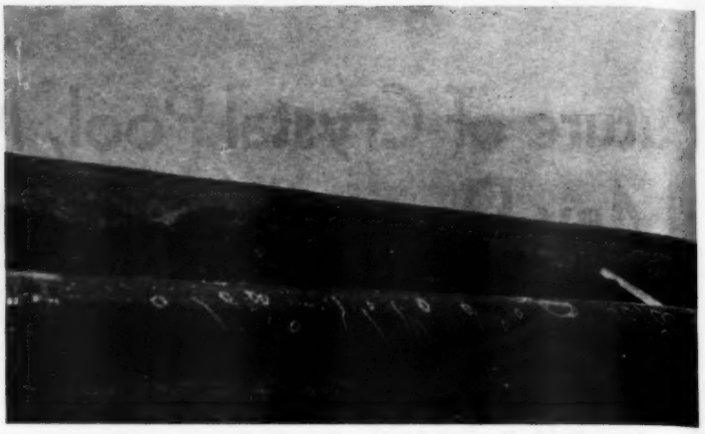
Standard Oil Co. officials at Newark, N. J., airport on Air Transport Day, May 15, standing by the amphibian "Essowing." Left to right: A. L. Mellar, Standard Oil Export Corp.; J. E. Skehan, in charge of wholesale sales, Standard Oil Co. (New Jersey); F. H. Bedford, director, Standard Oil Co. (New Jersey); E. E. Aldrin, head of aviation department; R. T. Haslam, general sales manager; H. K. McCann, McCann-Erickson Co.

NEW YORK, June 15.—W. R. Mook, who has been connected with export oil sales of the Standard Oil Co. (New Jersey) for several years, has been elected president of the Standard Oil Export Corp., a subsidiary company. This company is controlled by the Standard Oil Co. of Louisiana, Standard Oil Co. of New Jersey, Humble Oil & Refining Co. and Carter Oil Co., subsidiaries of the parent New Jersey Standard, and handles the export sales operations of these companies. The Anglo-American Oil Co., Ltd., marketing unit in the United Kingdom, is a subsidiary.

Mr. Mook, who is widely known in European and domestic marketing circles, succeeds D. L. Harper, who was recently elected a director of the Standard Oil Co. (New Jersey). Mr. Mook, who has been vice president of the export corporation, has been succeeded by A. L. Mellar, who has also been engaged in the foreign sales operations of the Standard.

The following were elected directors of the export corporation: F. Balling, F. Holman and G. W. Gordon and Messrs. Mook and Mellar. C. G. Sheffield, C. H. Whitman, H. C. Wiess and D. L. Harper retired from the board.

New Practices Used In Pipe Conditioning To Combat Corrosion



Section of line on Houston Pipe Line Co.'s East Bayou reconditioning job showing number of holidays found by double acting holiday detector. This is a pitch enamel coated line

By NEIL WILLIAMS
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., June 17.—The heavy toll which corrosion is taking in maintenance costs of pipe lines is resulting in operating companies devoting increasing attention to the proper protection of pipe. Among companies giving more attention than usual lately to corrosion is Houston Pipe Line Co. Something over a year ago this company established a special corrosion engineering department under the direction of Dave Harrell. With the functioning of this department the company has undertaken a number of definitely new practices in pipe conditioning and coating and other phases of pipe protection expected to result in lessened corrosion losses.

This company has tackled the corrosion problem on its gas lines from a scientific standpoint based on practical operation. A laboratory is operated by the company at its Houston offices where all coatings are given thorough tests before being used. Although the kind of coating is considered of particular importance, the company is more concerned with its effective application to the pipe and the adaptation of certain types of coating to different jobs. It is believed no coating is any more effective than the manner or condition under which it is applied.

Uses Hot Coatings

At this time the company has standardized to a large extent on hot coatings, mainly because of the time element involved in the drying of cold paints. The company has found there are a number of extremely effective cold paints but feels it does not wish to allow as much as 24 hours time for the drying of the coating before covering the line, and a shorter time would destroy the effectiveness of the paint.

On new jobs or relaying of lines, the company uses 165 degree pitch enamel almost exclusively for coating. On smaller jobs and leak repairs, asphalt coating is used. The pitch enamel has been found to require extreme exactness and care in application, so it is deemed advisable to use it only on jobs of such size that adequate equipment for cleaning, handling and coating would be brought in. On the smaller jobs it would not be considered economically practical or justifiable to move in the facilities for handling the pitch enamel.

Under the procedure of application it has followed, the Houston Pipe Line Co. has had extremely satisfactory results with hot asphalt coating. The chief objection to asphalt in the past has been its softness and characteristic of absorbing moisture. The softness made it subject more readily to marring in handling of the pipe and in backfilling, thus increasing the chances of exposing the pipe to corrosive elements. In absorption of water from the soil, most operators figured the effectivness of the asphalt as a coating would be less. Research by corrosion engineers of the company indicated, however, that although the asphalt might absorb water, the water did not penetrate the coating. As an extra precaution to prevent absorption of water, an inhibitor grease is applied to the asphalt which eliminates trouble from that cause.

Double acting holiday detector developed by Dave Harrell, corrosion engineer, Houston Pipe Line Co. An auxiliary radio receiving set facilitates detection of holidays. Asphalt coated pipe is wrapped with 30-pound Kraft paper before holiday detector is run. In the picture, left to right, are: Dave Harrell, holding radio receiving set listening for holidays; T. A. Chappell, general pipe line foreman for Houston Pipe Line Co.; and William Tolbert, warehouse clerk. Picture taken at Houston Pipe Line Co.'s warehouse at Houston, Texas

Wrapping the Pipe

As to marring or damaging the coating in handling the pipe and in backfilling, the company makes a practice of wrapping asphalt coated pipe with 30-pound kraft paper. The wrapping is for two purposes, to protect the coating and to facilitate the operation of a holiday detector. When the pipe is in the ditch, sheets of heavy kraft paper are laid over it along sections where there are clods or rocks to be dumped on it. The paper acts as a cushion and prevents injury to the asphalt.

Hot asphalt also is used on all leak repair jobs. The prevailing practice of most companies is to use cold paint coatings under such conditions. With the use of hot asphalt, which dries quickly, Houston Pipe Line Co. is enabled to repair a leak in as short a time as 30 to 40 minutes, including digging of the bell hole.

Leak repair jobs are one of the most important phases of gas line maintenance in the opinion of the Houston Pipe Line Co., and if the job is not properly done and the pipe not properly coated and protected, the repair will result in further trouble. In the repair of a leak it is customary to place a rubber plug over the leak, with a metal clamp fastened around the pipe to hold the plug in place. There always is a little clearance between the clamp and the pipe, and unless the pipe is properly coated at this point an electrical action takes place which results in additional leaks in the pipe around the ends of the clamp. These develop rapidly, and the repair job has to be done over, and each time it is done it is more difficult.

So far, Houston Pipe Line Co. has had no trouble. In its practice, both the pipe and the clamp are thoroughly cleaned and primed. With the clamp securely in place, the hot asphalt is applied generously around the repair. A small, portable heating pot for melting the asphalt is taken to the job. To insure the asphalt covers all exposed places, a sheet of heavy kraft paper is held under the clamp and the asphalt poured around the clamp. The asphalt when cooled is thoroughly coated with an inhibitive grease to keep out moisture, and the job is wrapped with 30-pound kraft paper. When this is done, the bell hole can be filled and the job is finished.

Ordinarily cold coatings need 24 hours to dry, but in actual practice men in the field are inclined to hurry this and fill in the pipe too quickly. When this is the case the coating is ineffective and naturally the repair has to be done over again in short order.

Coating Couplings

Use of kraft paper in the pouring of hot asphalt around the clamps is a practice which this company follows in the coating of all couplings. Generally, the coating is only daubed on around the under side, consequently, it is impossible by that procedure to apply the coating to all exposed places thoroughly. Engineers of the company started to devise a kind of a pan to fit around the under side of the coupling which would be clamped up around the pipe to hold it in place for the pouring of the coating material. The pan was to have had a petcock on the under side to permit the drainage of the surplus coating material. The kraft paper, however, has been found to serve the purpose efficiently, and it is only necessary to kick a hole in the bottom of the paper to drain the surplus material into a pan under it. The paper can be left in the hole around the pipe, serving as added protection. Kraft paper also is used instead of rags for spreading the coating material around the under side of pipe. When a sheet becomes gummed up it is left around the pipe and a clean sheet used. This eliminates cleaning rags.

Holiday Detector

Particular care is taken by the company to cover all holidays in coating jobs. Mr. Harrell, the corrosion engineer, has developed a very simple, yet highly effective, holiday detector now in use by the company. While similar in principle to other holiday detectors, it is double acting and operates with four dry cells instead of a storage battery. The dry cells and the Ford tension coils for generation of current are contained in a small lightweight box which can be carried by hand instead of being rolled along the top of the line on rollers. Two detectors can be operated from the same box, one to each coil. These detectors are made of hinged metal bands which fasten around the pipe, and which rest on the pipe on small casters, set at intervals around the inner rim of the metal band. The four casters on each detector are set slightly off center so the detector can be moved along the pipe only by an up and down movement by the operator. This prevents the operator from moving the detector too rapidly along the pipe and passing up holidays. Copper screening with the ends frayed out serves as the brushes on the detectors. The detectors are worked from the outer ends of the pipe to the center. An accompanying picture shows the operation of the detectors.

Due to the fact that asphalt is soft and gums up the brushes and the rollers, it is necessary to wrap asphalt coated pipe with paper before using the detectors. This makes it difficult to detect holidays by sound as the scratching of the brushes along the kraft paper drowns the sound of the spark as it jumps from the brushes to the pipe. This problem is overcome by the use of an auxiliary, portable radio receiving set, carried along the job. Although not noticeable to the man moving the detector, the static sound of the spark is picked up by the receiver and is

(Continued on Page 42)

Aviation Gasolines Call for Most Complete Specifications

By E. L. BASS*

Specifications for boiling range of aviation gasolines have largely been built up as a result of experience by engine operators in collaboration with the fuel suppliers, and it is interesting to observe the requirements of the three main government specifications in use today, as shown in Table 1.

The dewpoint of any fuel meeting these specifications is unlikely to exceed 115° C., while the limits laid down for the early part of the boiling range are adequate to ensure good starting.

TABLE 1—GASOLINE SPECIFICATIONS

	U. S. Army Y-3557-G	British Air Ministry D.T.D. 224 & 230	French Air Ministry Norme, Air 3402
Recovery to 75° C. ...	Not less than 10%	Not less than 10%	10 to 20%
Recovery to 100° C. ...	Not less than 50%	Not less than 50%	Not less than 50%
Recovery to 135° C. ...	Not less than 90%	Not specified	Not specified
Recovery to 150° C. ...	Not specified	Not less than 90%	Not less than 90%
Endpoint	Not specified	Not to exceed 180° C.	Not to exceed 180° C.

Vapor Pressure

The formation of vapor in a fuel system occurs when the vapor pressure exceeds the liquid pressure. Thus the vapor pressure of a fuel becomes a characteristic of importance since every fuel system will have a limit to the quantity of vapor it can contain and yet maintain the requisite flow of fuel to the engine.

The vapor pressure of gasolines is generally measured for commercial purposes by the Reid method and is expressed in terms of "lbs./square inch at 100° F." Although related to the boiling range, vapor pressure must be considered independently as gasolines can be blended to meet the boiling range requirements of the chief specifications and yet possess vapor pressures which would be too high for safe use in an aircraft installation. Most specifications lay down a maximum limit for vapor pressure as determined by the Reid apparatus of 7 lbs./square inch at 100° F. (0.47 atm. at 37.8° C.). There should be no difficulty in designing fuel systems to operate satisfactorily under all conditions with fuels meeting this requirement, although the design of fuel systems to use motor spirits presents greater difficulties as these normally have higher vapor pressures than aviation gasolines.

Flying conditions have a considerable influence on the formation of vapor from the fuel. Even more important is the design of the fuel system to avoid the accumulation of the vapor which is formed to cause a "lock." The essential features are the layout of the fuel lines, cocks, filters, etc., while the shape and internal roughness of all passages including the jets and the rate of fuel flow are equally important.

With engines fitted with fuel pumps which exert a suction head on the fuel line, the tendency to form vapor in the system is increased. An equally unfavorable feature of such installations is the fact that the fuel pumps are generally engine driven and consequently are exposed to a good deal of conducted heat, some of which will be transmitted to the fuel. It must also be remembered that duplication of fuel pumps may not provide the factor of safety at first apparent if they are connected to a common suction line.

In the case of installations in which trouble from vapor locking occurs, the advantage to be gained by providing additional cooling to the fuel lines, filters and pumps must always be remembered. "Venting" of pockets in lines or filters may be employed when it has been found they are responsible for the accumulation of vapor. An increase in head or rate of flow may also avoid the collection of sufficient vapor to cause locks.

Some comprehensive work has been done on the subject of vapor locking of fuel lines by Dr. Oscar Bridgeman and his collaborators of the U. S. Bureau of Standards. This work has been described in various papers.[1 to 4] and has included a large number of full-scale experiments on the measurements of fuel line, tank and carburetor temperatures in numerous types of aircraft.

The subject of vapor locking would be incomplete without some reference to the possibility of these occurring through the liberation of dissolved air in the fuel. Fuel which has received considerable agitation during the process of filling the tanks of a machine may contain sufficient air to cause a lock when it is released at the lower atmosphere pressures at altitude. This can be avoided by re-design of that part of the fuel system at which the air is first able to collect and whence the ultimate restriction of flow or possibly complete lock originates.

Freezing Point

The first stages of freezing of gasoline are indicated by the formation of minute crystals of ice in the liquid. These crystals appear at appreciably higher temperatures than the ultimate freezing of the bulk of the liquid.

The effective freezing point of an aviation gasoline is taken at the temperature at which crystals are first detected, as it is possible in practice that these may accumulate in a filter to such an extent that they would obstruct the fuel flow long before the temperature became sufficiently reduced to cause solidification of the bulk of the fuel in the tank or pipe lines.

Reference to the most important specifications for aviation gasoline indicates that a maximum freezing point of —50° C. provides an adequate safety margin, and this figure is easily met by all fuels entirely of petroleum origin.

With benzol mixtures, however, the case is different, as pure benzol has a freezing point of +5° C. and the average "motor benzols" used for blending in aviation fuels have freezing points of about —10° C. A freezing point curve for mixtures of aviation gasoline and benzol would show that if —50° C. is regarded as the safe limit, it is not possible to employ any blend containing more than 20 per cent of benzol. The benzol used in this case had a freezing point of —10° C.

Toluene can, of course, be used in place of benzol in much larger quantities if a product of the necessary purity can be obtained, the freezing point of pure toluene being —95° C.

Although the alcohols normally used in blends of gasoline have extremely low freezing points, one of the chief dangers attached to their use is their tendency to separate from the gasoline at low temperatures.

It will also be observed the addition of benzol to alcohol/gasoline blends is of some advantage in reducing the tendency to separation.

For comparatively limited concentrations of alcohol, it will be seen that separation occurs very readily when only extremely small quantities of water are present.

Due to this extreme sensitivity to separation and their lower calorific value, alcohol fuels are considered by most authorities to be unsuitable for regular air line use.

Specific Gravity

Relatively the specific gravity of aviation gasolines is of little interest compared with other properties, as evidenced by the wide range which is permitted in the principal specifications.

The fuel level in the float chamber depends upon the specific gravity, and thus will have an effect on the fuel flow from the jet by virtue of the alteration of head. The extent of this will depend upon the position of the jet, i.e., whether it is free or submerged, the former being the more sensitive. Most modern carburetors are designed with submerged jets and with these the variations in specific gravity of aviation gasolines (about 0.710 to 0.765) produce an insignificant variation in flow.

From the point of view of aircraft performance, specific gravity is also impor-

*Part of paper presented at meeting of the Royal Aeronautical Society, London, England, on "Fuels for Aircraft Engines." Mr. Bass is connected with the Asiatic Petroleum Co.

[1] Airplane Fuel Line Temperatures, by Oscar C. Bridgeman, Hobart S. White and C. A. Ross. S.A.E. Journal, Vol. 26, August, 1931.

[2] The Effect of Airplane Fuel Line Design on Vapor Lock, by Oscar C. Bridgeman and Hobart S. White. S.A.E. Journal, Vol 25, October, 1930.

[3] Vapor-Locking Tendency of Aviation Gasolines, by Oscar C. Bridgeman and Hobart S. White. S.A.E. Journal, Vol. 25, August, 1930.

[4] The Effect of Weathering on the Vapor-Locking Tendency of Gasolines, by Oscar C. Bridgeman and Elizabeth W. Aldrich. S.A.E. Journal, Vol. 26, July, 1930.

REPRESENTATIVE SPECIFICATIONS FOR AIRCRAFT MOTOR FUELS

	British Air Ministry	British Air Ministry	French Ministere de l'Air	French Ministere de l'Air	U.S. Air Corps	Pratt & Whitney	Pratt & Whitney	Wright Aeronautical Corp.	Wright Aeronautical Corp.	T.W.A.
Number	D.T.D. 224	D.T.D. 230	Normes 3401 & 2 Aeronef A	Normes 3401 & 2 Aeronef B	Specification Y-3557/G	73 & 80	87	73 & 80	87	80 & 87
Specific gravity.	0.79 max.	0.79 max.	0.78 max.	0.78 max.	.....	.....	.....	.....	.....	.....
Boiling range:										
10% recovery.	Below 75° C.	Below 75° C.	Below 75° C. Above 75° C.	Above 75° C. Below 75° C.	Below 75° C.	Below 70° C.	Below 70° C.	Below 75° C.	Below 75° C.	Below 75° C.
20% recovery.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
50% recovery.	Below 100° C.	Below 100° C.	Below 100° C.	Below 100° C.	Below 100° C.	Below 90° C.	Below 90° C.	Below 105° C.	Below 100° C.	Below 100° C.
90% recovery.	Below 150° C.	Below 150° C.	Below 150° C.	Below 150° C.	Below 135° C.	Below 110.5° C.	Below 110.5° C.	Below 180° C.	Below 135° C.	Below 155° C.
96% recovery.	.....	.....	.....	.....	.....	Below 122° C.	Below 122° C.	.....	.....	Below 180° C.
Final boil. point.	180° C. max.	180° C. max.	180° C. max.	180° C. max.	.....	.....	.....	.....	.....	.....
Reid V.P. at 100° F.	7 lbs./sq. in. max.	7 lbs./sq. in. max.	0.5 kg./sq. cm. max.	0.5 kg./sq. cm. max.	7 lbs./sq. in. max.	Below 7.5 lbs./sq. in.	7.5 lbs./sq. in. max.	7.0 lbs./sq. in. max.	7.0 lbs./sq. in. max.	7.0 lbs./sq. in. max.
Total sulphur ..	0.15% wt. max.	0.15% wt. max.	0.15% wt. max.	0.15% wt. max.	0.10% wt. max.	0.10% wt. max.	0.10% wt. max.	0.10% wt. max.	0.10% wt. max.	0.10% wt. max.
Actual gum ...	10 mgms./100 cc. max.	10 mgms./100 cc. max.	6 mgms./100 cc. max.	6 mgms./100 cc. max.	.....	.....	.....	.....	.....	.....
Potential gum ..	10 mgms. max. more than actual gum	10 mgms. max. more than actual gum	.....	.....	10 mgms./100 cc. max.*	10 mgms./100 cc. max.*	10 mgms./100 cc. max.*	10 mgms./100 cc. max.*	10 mgms./100 cc. max.*	3 mgms./100 cc. max.*
Freezing point .	Below —50° C.	Below —60° C.	Below —45° C.	Below —45° C.	Below —60° C.	Below —60° C.	Below —60° C.	Below —60° C.	Below —60° C.	Below —60° C.
Maximum lead concentration .	.....	4 cc./I.G.	.....	0.8°/00	6 cc./U.S. gal.	2.0 cc./U.S. gal.	3.0 cc./U.S. gal.	3.0 cc./U.S. gal.	3.0 cc./U.S. gal.	3.0 cc./U.S. gal.
Minimum octane number	77	87	70	85	92 (nominal)	73 & 80	87	73 & 80	87	80 & 87
Method	C.F.R. modified motor method	C.F.R. modified motor method	C.F.R. modified motor method	C.F.R. modified motor method	C.F.R. specially modified†	C.F.R. motor method	C.F.R. motor method	C.F.R. motor method	C.F.R. motor method	S.30 900/190
Acid heat	.....	.....	.....	.....	.....	11° C. max.	11° C. max.	11° C. max.	11° C. max.	.....

*In the U. S. Air Corps specification Y.3557/6 a special method of determining knock-rating is used.

The sample of fuel must be better than the Sub-standard reference fuel C.6 with the addition of 2 cc. T.E.L./U.S. gallon when tested in the C.F.R. engine modified in numerous ways. The most important modifications are:

1. The bore is reduced from 3¼ to 2⅝ in.
2. The engine speed is increased from 900 r.p.m. to 1,200 r.p.m.
3. The degree of knock is measured by means of a temperature plug instead of the bouncing pin.
4. The jacket temperature is increased from 100° C. to 165° C.
5. No heat is applied to the mixture.

As a matter of interest fuels meeting this specification generally have an octane number of about 87 when tested under motor method conditions.

†By "Accelerated Ageing Test."

tant, as it controls the total fuel weight for a given tank capacity. Considered on a weight basis alone the maximum variation in the heat value of normal aviation gasolines of different specific gravities amounts to less than 3 per cent in favor of the low specific gravity fuels. On a volume basis, however, the difference will amount to 4 per cent for aviation gasolines in favor of the high specific gravity fuels. It is only when the extreme range of aircraft is being considered that figures of this magnitude are of any interest, and even then other properties of the fuels are likely to have a far greater influence on performance.

Viscosity

The flow of liquid through a jet is directly proportional to its coefficient of discharge, and this in turn depends upon the viscosity of the liquid, the shape, size and length/diameter ratio of the jet.

In the case of carburetor jets the arrangement of them, i.e., whether free or submerged, is also important. The extent to which the viscosity affects the coefficient of discharge also depends upon the design of the jets, so that in some cases a change in viscosity over the range which is met in practice will be insignificant, while in others it will cause variations in mixture strength at certain rates of flow. As fuel viscosity is related to temperature, it is obvious that carburetors should be designed primarily to be independent of fuel viscosity since the varations met in service, due to changes of temperature, are greater than those of different basic gasolines.

Gasoline viscosities range from about 0.40 centipoises to 0.50 centipoises at 40° C. and with the majority of modern carburetors this is insufficient to effect any appreciable variation in mixture strength.

Calorific Value

The extent and effect of variations in the heat value of gasolines has already been referred to in the notes on specific gravity. For a given viscosity and specific gravity, the supply of heat energy to an engine from a carburetor will vary directly as the calorific value. Actually, changes in calorific value in gasolines are invariably attended by changes in specific gravity and viscosity, so that it is impossible to generalize on the possible effects of these variants on the flow characteristics of carburetors.

When other types of fuels are considered, more striking differences in calorific value are observed, viz.:

Fuel—	Specific gravity @ 15° C.	Gross calorific value B.t.u.'s/lb.	Gross calorific value B.t.u.'s/Imp. gal.
Gasoline	0.704/0.782	19,500/20,100	142,000/153,250
Benzene (pure)	0.884	18,250	157,000
Methyl alcohol	0.829	9,900	82,100
Ethyl alcohol	0.794	11,800	94,500

Blends containing alcohol, therefore, will require special carburetor adjustment to compensate for their reduced calorific value. For the same reason, for a given fuel load, the range of aircraft using alcohol fuels will be reduced.

Impurities

(a) Water—Gasoline itself is non-hygroscopic and will separate completely from water with which it may be mixed.[5]

With normal care it is possible to deliver gasoline into the tanks of an aircraft virtually free from water, any quantity which may be held in suspension being insufficient to cause trouble if the usual design of tanks and filters is employed.

In large storage tanks water may remain in suspension in the gasoline for some time after they have been filled. The process of filling the tank causes agitation of any water lying in the bottom of the tank and admixture of it with the gasoline. Therefore it is desirable that after such a tank has been filled, supplies should not be drawn from it within an hour or two unless the very greatest care is taken in filtering. Water can usually be detected in tanks by the use of water-finding paper.

The paper used for the detection of water in gasoline tanks is usually coated with colored sugar solution which is dissolved on contact with the water so that a clear mark is left on the paper at the water level in the tank.

(b) Gum—Various tests are embodied in the most important specifications for the purpose of eliminating fuels of high gum-forming characteristics. As a general rule such tests are only necessary when benzol, cracked or coal spirit products are included in the fuel, as the straight-run petroleum aviation gasolines have a practically negligible gum content as determined by the tests laid down in the chief specifications.

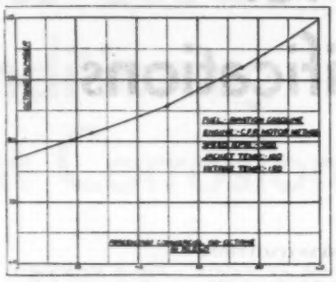


Fig. 1—Anti-knock value of blends of aviation gasoline and iso-octane

The gum tests may be divided into two classes, viz., those for the estimation of existent gum, and those for the estimation of potential gum. The latter test is taken as an indication of the stability of the fuel for storage purposes. The normal test for existent gum which is adopted in most European specifications consists of evaporating a given quantity of fuel to dryness in a glass dish by maintaining it at 100° C. The resultant residue is thus determined as a percentage of the fuel evaporated. The accelerated ageing test given in the American specifications is essentially a potential gum test and requires a fuel first to be put in a bomb containing oxygen at 100 lbs./square inch and maintained thus at a temperature of 100° C. for four hours. The sample is then evaporated to dryness in a glass dish and the weight of the gum residue determined in the usual way. A potential gum test is also included in the D.T.D. 224 and D.T.D. 230 specifications. In this case the fuel is incubated at 35° C. for 20 hours before making the usual gum determination.

(c) Sulphur—It is necessary that in all fuels there should be a complete absence of free sulphur, but total sulphur contents of up to 0.15 per cent are admitted in various specifications. The total sulphur contents of the best aviation gasolines do not usually exceed 0.05 per cent, and it is only when benzol and coal spirit blends are employed that there is any risk of the sulphur content approaching the limits laid down in the various specifications.

Corrosive acids resulting from the admixture of products of combustion of the sulphur with water vapor (H_2SO_3 and H_2SO_4) are only harmful when condensed, a condition which is seldom met in practice, except during starting and warming up and when the engine is cooling down. In any case, the lubricating oil film on most working parts provides adequate protection from the small quantities of corrosive materials which may develop. There is some evidence that a high sulphur content produces excessive corrosion of sparking plug electrodes, but this can be overcome by the use of suitable electrode materials.

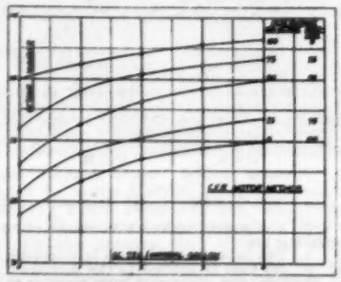


Fig. 2—Motor test results on blends of iso-octane fuels

Special Tests

Acid Heat Test—The general trend is for aviation gasoline specifications to become simplified now that the practical influence of the main physical characteristics of them are understood. Therefore, few special tests are to be found included in modern specifications.

With the introduction of the C.F.R. motor method as the standard for testing aviation gasolines in America, it was thought that it gave too favorable a rating for some cracked gasolines, benzol and alcohol. To exclude such fuels which might otherwise pass all other requirements of the specification, an acid heat test was devised. This test consists merely of mixing 150 mls. of gasoline with 30 mls. of pure sulphuric acid, and after agitation the temperature rise recorded. The temperature rise must not exceed 11° C. according to the American specifications incorporating this test.

Future Developments

With the introduction of new methods of refining and synthesis in the petroleum industry it is not altogether certain that fuels of the future will retain their identities as they are known at the present time. The increasing demand for fuels of high octane number becomes more and more difficult to satisfy if existing specifications are to be adhered to. The inclusion of cracked fuels in aviation gasolines is likely to be of some benefit from the production point of view, and with improved methods of refining it is probable that such fuels will be made available which will meet the demands of the aviation industry in regard to stability, freedom from gum formation and anti-knock value. Nevertheless, the use of these fuels for aviation must lead to some modification of existing specifications.

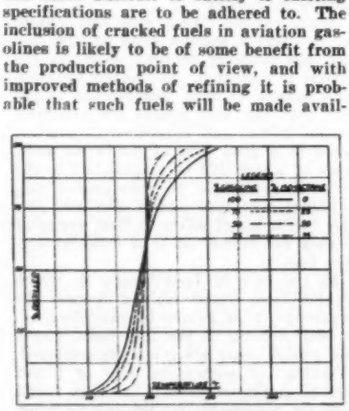


Fig. 3—Distillation curves of the 4 motor fuels used

Attention has also been drawn to the commercial production of iso-octane, and although the quantities of this product which are likely to be available for some time to come will be extremely small, it is of interest to examine its possible influence as a blending agent in aviation gasolines. Further research in the petroleum industry may lead to the synthesis of other very high knock-rating compounds, but the production of these on any commercial scale cannot be envisaged at the present time.

Iso-Octane

Pure iso-octane (2-2-4 tri-methyl-pentane) has the following properties and the commercial product is unlikely to have very different characteristics:

Specific gravity at 15° C.	0.694
Boiling point	99.3° C.
Freezing point	—100° C.

(a) Antiknock Value—By definition of the terms of reference at present used for the expression of antiknock value, iso-octane has an octane number of 100. This is, however, purely an arbitrary standard, and it is possible that with the introduction of fuels of antiknock values of this order a new scale or standard will have to be adopted. For the time being the antiknock value of fuels of more than 100 octane number can be obtained by extrapolation.

Whatever blends of aviation gasoline and iso-octane may be used, it is certain that tetraethyl lead will be used still further to increase their antiknock value. In Figures 1 and 2 the antiknock value of blends of aviation gasoline and iso-octane are shown together with their respective lead curves. It is clear from these curves that fuels of 100 octane number and over can be obtained with normal concentrations of tetraethyl lead. It is also interesting to observe that with straight blends of iso-octane and aviation gasoline up to 50 per cent the blending value of octane is only 95.

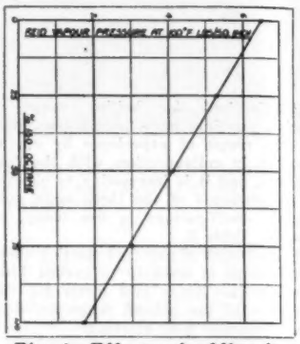


Fig. 4—Effects of adding iso-octane to aviation fuel with respect to change in vapor pressure

A word of caution should be given in the interpretation of the results obtained with those very high antiknock value fuels. The exact determination of their octane numbers presents some difficulty, as the accuracy of the C.F.R. engine diminishes appreciably in that range. Secondly, there is no evidence available to show whether or not the C.F.R. results can be relied upon to give satisfactory correlation with full-scale engines. For example, the addition of 3.6 ccs. T.E.L./imperial gallon to pure octane produces an increase in octane number of just over 6, whereas the increase in the aviation gasoline for a similar amount of lead is nearly 12 octane numbers.

(b) Boiling Range—The distillation curves for three blends of octane and aviation gasoline are shown in Figure 3. The effect of the octane in reducing the volatility at the lower end of the boiling range is shown. It will be noticed that to meet the existing specifications the quantity of octane that could be used is limited. This is a difficulty which will doubtless be overcome in the future, either by adjustment of the boiling range of the gasoline constituent, or, more likely, by the development of engine starting systems to cope with the decreased volatility at low temperatures. From the point of view of distribution efficiency, which can be judged by the percentage recovered to 100° C. in the distillation test, the addition of octane to existing aviation gasolines actually results in an improvement.

(c) Vapor Pressure—Figure 4 shows that the addition of octane to aviation gasoline has the effect of reducing the vapor pressure as determined by the Reid apparatus at 100° F. This leaves a margin, should occasion arise, for the readjustment of the boiling range to compensate for the lower initial volatility of octane/gasoline blends.

However, the specification and octane concentrations to be used in the fuels of the future will depend too much on economic and practical considerations to anticipate them at the present time.

In conclusion, the author wishes to express his thanks to the directors of the Asiatic Petroleum Co. for their permission to publish this paper and also his indebtedness to his colleagues in the Asiatic Petroleum Co. and the Amsterdam and Delft laboratories of the Bataafsche Petroleum Maatschappij for their valuable help.

Acknowledgment is also due to the Air Ministry and the Bristol Aeroplane Co.

[5] Water is soluble in gasoline to the extent of about 0.01 per cent only.

Decision by Texas Supreme Court on Well Spacing Law Far Reaching

AUSTIN, Tex., June 17.—A decision rendered by the Texas Supreme Court affirming the Austin Civil Appellate Court's opinion in the case of C. H. Brown and others, the Railroad Commission of Texas and others, vs. Humble Oil & Refining Co. will have a far-reaching effect on control of drilling and well spacing in Texas fields in the future. This decision was rendered on June 12 and defined the powers granted the Railroad Commission under Rule 37 on well spacing first adopted in 1919 and since applied to every oil field in the state but with varying spacing distances between wells in some fields and in others based upon acreage.

The history of the case indicates the Humble Oil & Refining Co. owns the oil and gas rights in a lease of more than 100 acres in the East Texas oil field and C. H. Brown and others acquired title to a three-acre tract surrounded on three sides by the Humble property. After securing permit to drill one well on a 1½-acre subdivision of this three-acre tract, C. H. Brown applied for permit to drill a second well on the other half of the tract.

Under Rule 37 the spacing between wells is fixed at 660 feet distance in the East Texas oil field, or one well to 10 acres and it is necessary to space the well at least 330 feet from any property line. This ruling was made to prevent drainage of adjacent property and gives the commission power to make spacing rules to prevent waste.

In the past many exceptions to the spacing as fixed under Rule 37 have been allowed and this practice has led to the subdividing of tracts of land into numerous small pieces for the sole purpose of securing special permits to drill additional wells upon the acreage normally restricted to the usual well spacing.

Engineers Upheld

In handing down the decision Associate Justice John H. Sharp of the Supreme Court stated: "It is now, however, recognized that when an oil field has been fairly tested and developed, experts can determine approximately the amount of oil and gas in place in a common pool, and can also equitably determine the amount of oil and gas recoverable by the owner of each tract of land under certain operating conditions."

The decision recognizes the right of exceptions to prevent injustice to landowners entitled to recover their share of oil and gas in place beneath surface they own, but adds:

"Where Rule 37 is in force in a certain territory, a voluntary subdivision of a tract of land subject to development for oil and gas as a whole would not entitle the owner of said divided tract, or tracts, as a matter of right, to an exception of Rule 37 on the ground of vested rights, because such act would destroy the rule and render the conservation laws a nullity.

"If after a hearing the commission acts without regard to the evidence, or makes a ruling wholly unsupported by the evidence, it cannot be said to have exercised its discretion. And where it is shown that the commission has abused its discretion, or has acted illegally and issued a permit in violation of its rule, the courts are fully authorized to nullify the permit of the commission and prevent its enforcement.

Pro Rata Recovery

"Conditions may arise where it would be proper, right and just to grant exceptions to the rule so as to permit wells to be drilled on smaller tracts than prescribed therein. Also, conditions may arise where it would be proper, right and just to permit tracts to be subdivided and such subdivisions drilled after the adoption of the rules; but in all such instances it is the duty of the commission to adjust the allowable, based upon the allowable production, so as to give to the owner of such smaller tract only his just proportion of the oil and gas. By this method each person will be entitled to recover a quantity of oil and gas substantially equivalent in amount to the recoverable oil and gas under his land.

"Without trying to dictate to the commission as to any particular form to be used, we would suggest, however, since it is possible to ascertain approximately the potential production of a proved oil field, and particularly the East Texas oil field, that Rule 37 be so amended as to specify the exceptions noted therein more definite and appropriate terms, so that all persons interested in the field may know more definitely their rights thereunder.

"In this connection, we hold that since the legislature has bestowed the power of administering the oil and gas business of this state on the Railroad Commission, every person has the right to apply to that tribunal for relief as a matter of right, and not as a matter of grace.

"The commission, in order to prevent waste, has the power to limit the rate of flowing in the same way that it has the power to regulate spacing."

At the same time a decision was rendered in the case above cited the court passed upon two similar cases affirming Maurice Stewart vs. Railroad Commission and H. D. Bennett vs. Railroad Commission and Sun Oil Co., finding against plaintiff in each case.

These decisions have much significance for the future administration of the conservation laws of Texas and recognize the principles outlined by petroleum engineers; make it possible to estimate, with a fair degree of accuracy, the oil and gas originally in place under any tract of land, and the commission has the power to regulate withdrawals from wells to prevent one set of wells from securing oil and gas not properly belonging to them. The Supreme Court affirms the commission has ample authority under the Constitution and police power to enforce this Rule 37 and it is possible suits may be filed to recover damages for oil taken from some closely spaced wells that obviously has not all come from the land upon which the wells were drilled.

Bar Association Will Discuss Oil Problems

Legal phases of the petroleum industry will be discussed at the meeting of the American Bar Association scheduled for July 15 to 17 at Los Angeles, Calif. The subject will be taken up in the mineral law section.

James C. Denton, of Tulsa, will discuss "The Petroleum Industry Under NRA" at the opening session Monday morning. On the same program is Charles I. Francis, of Houston, Tex., whose subject will be "Divorcement of Pipe Lines."

Robert E. Hardwicke, of Fort Worth, Tex., will speak on "The Rule of Capture and Its Implications as Applied to Oil and Gas" at the Monday afternoon session. "Unit Operation Agreement on Public Lands" will be considered in a paper by George W. Holland and LeRoy H. Hines, to be presented by Herman Stabler, of the U. S. Geological Survey.

J. Howard Marshall, formerly of the Petroleum Administrative Board, will speak on "Federal Control of the Oil Industry" at the morning session of Tuesday. "Control of the Petroleum Industry Through Interstate Compacts" will be the subject of an address by Rush M. Blodget, of Los Angeles. The program will close with an address, "Governmental Control of the Petroleum Industry in Mexico," by General Francisco Mugica, Secretary of National Economy, Mexico.

Some of the directors of the International Petroleum Exposition and Congress leaving the meeting which approved the dates May 16 to 23, 1936, for the ninth show at Tulsa.

From left to right on the front row is the executive committee composed of O. T. Dawson, division manager, National Supply Co., Tulsa; Clyde Pape, exposition treasurer and secretary-treasurer, Selby Oil & Gas Co.; W. G. Skelly, president of the exposition and president of the Skelly Oil Co.; Frank Hinderliter, president, Hinderliter Tool Co.; and Alf G. Heggem, president, Oil Well Improvements Co.

Second row: C. H. Rawson, assistant manager; W. B. Way, general manager; Clyde Alexander, Bartlesville; R. S. McBeth, secretary for the exposition; R. C. Sharp, independent oil operator; W. L. Connelly, chairman board, Sinclair Prairie Oil Co.; and E. B. Reeser, president, Barnsdall Oil Corp.

Third row: W. L. Gray, district manager, Jarecki Manufacturing Co., Tulsa; R. S. Ellison, president, Stanolind Pipe Line Co.; J. S. Sidwell, assistant superintendent, Sinclair Prairie Oil Co.; H. B. Fell, Independent Petroleum Association of America.

Back row: E. R. Filley, division manager, Texas Co., Tulsa; M. E. Waters, president, Hanlon-Waters Co., Tulsa; P. C. Lauinger, The Oil and Gas Journal; Earl Sneed, president, Sneed Royalty Co.; and A. B. Bourne, secretary-treasurer, Oklahoma Iron Works.

Other directors represent practically every phase of the oil industry and all parts of the country.

International Agreement in Oil Industry Necessary Says J. B. Aug. Kessler

By J. B. AUG. KESSLER
Royal Dutch Co.*

The world crisis, in my opinion, is mainly the result of the mishandling of the credit and monetary system, arising out of the situation created by the World

J. B. AUG. KESSLER

War and its after-effects when enormous consumption without economic justification resulted in the creation of large unsound credits. War loans and war indemnities and the credit structure subsequently built on them are, economically speaking, in effect improper and false credits, the burden of which world trade has had to carry since the war. The collapse of the monetary and credit structure brought about the crisis; as a result trade became more and more difficult and as a "protection" against these difficulties, restrictions on trade in the form of import duties and quotas, exchange restrictions and similar measures were introduced in a vain endeavor to save national economy. Even "self-sufficiency" is being tried as a life-saver. The opinion is widely held that the crisis is the result of these developments, but in my opinion the reverse is the case.

Oil Consumption and Potential Production

If the world crisis has not resulted in a considerable drop in oil consumption, if in fact during 1934 the consumption had again increased, it only shows that even an impoverished world needs oil and more oil in order to reduce its cost prices, not only of manufactured but also of primary products. And a reduction of cost prices is one of the most important remedies of the world's troubles. If, however, we compare the present consumption with the potential production of wells already drilled, we find that there is a very wide margin between the two. In other words, even if a world-wide conservation agreement were possible, it would mean a world oil production very much below the potential production. The wider that margin the greater the strain on the world-wide agreement. That strain can only be reduced by greater consumption.

Currency and the World Crisis

In order to increase world consumption sufficiently it will be necessary to remove the causes that slowed down the considerable yearly increase to which the oil industry before the crisis had been accustomed. Before we can expect a greatly increased consumption of all merchandise, in other words, before we shall see the end of the world crisis or of the crisis in any particular branch of production, the seriously mishandled credit and currency system must be re-established by government agreement. The sooner the conceptions about credit and currency of the U.S.A., the sterling bloc, the gold bloc and the silver countries come nearer to one another, the sooner will it be possible to re-establish the world credit and currency system on a sound basis.

As long as some of the most influential countries in the world are aiming at maintaining their pre-crisis gold standard by drastic deflationary policies which must result in a reduction of consumption and therefore of production, while other countries are at the other extreme of increasing consumption and therefore production regardless of what happens to their credit and currency systems and that of other nations, that is, so long as such widely divergent conceptions of the causes and methods of remedying the world crisis are held by different groups, the way for any co-operative effort not only in industry but also in finance and politics, seems to be beset with serious obstacles.

It is to be hoped that the gold bloc countries will soon realize that as gold has been hoarded on an unprecedented scale, it has naturally become extremely dear. Thus in countries that are still on the gold standard it has completely thrown out of balance the proportion of the shares claimed by the different groups that play their part in the production process (wage-earners, creditors, tax authorities and shareholders). This has brought many an enterprise to ruin. It seriously worsens the dislocation of the world's production under which we suffer. A perfectly unbiased recognition of the fact that if gold was a fair standard of value before it was hoarded it cannot be so any more now that it is hoarded (both privately and by public bodies), leads logically to the conclusion that the gold contents of the standard coin must be reduced. This is important not only for one country but for the whole world, as it will bring the two extreme conceptions nearer to each other, and thus support international co-operation. Without such a reduction in the gold contents of the standard coin the application of the cure of the monetary system will have to be so drastic that it will cause dangerous social upheavals.

Silver

The fact that silver still is the accepted and trusted measure of value for about one-third of the world's population makes it imperative to maintain it as such and to ensure that it takes hand in hand with gold its place in a homogeneous money and credit system. On this subject no end of confusion has been created by the two opposing camps. I think that, for many very logical reasons into which, in this article, I do not want to go, we shall see silver come into its own again.

Governments and Organization of Industry

Mention has been made above of the retarding effect in the movement towards recovery resulting from nationalistic tendencies and the interference of governments. There is, however, a direction in which governments could act constructively. As I suggested in World Trade in March, 1933, "Governments should instruct the responsible leaders of each of the export key industries of their respective countries to get together with the responsible leaders of the kindred industries in all other countries to work out international arrangements of co-operation that will restore prosperity to each of those industries by stopping wasteful and destructive competition. How this should be done for each of the big industries cannot be decided by anyone better than those who know such industries as a result of their daily work. It would be necessary that each government should undertake that, as soon as a key industry has worked out its own scheme, such scheme should be submitted to the respective governments in order to see whether its application necessitates alteration in the existing tariff laws and regulations. The governments concerned should undertake that in such a case they will alter their tariffs accordingly in order to make it possible to put the agreement into effect."

These views I hold today, and I am confident that action along these lines would bring the desired results. On the other hand, if industries do not co-operate internationally and if they do not enlist the support of their governments for international agreements framed on reasonable lines, there is very real danger that governments will themselves step in and take the regulation of internation industry into their own hands. As an illustration of what may happen I take the suggestion recently made to the Senate Agricultural Committee by the United States Secretary of Commerce that an international board should be formed to divide the world's export markets among the producing and manufacturing nations.

*Extract from World Trade.

West Texas Crude Is Well Adapted to Manufacture of All Asphalt Grades

By GEORGE WEBER

The past period of low prices for refinery products has acted as a stimulus to many refiners for research and development of new and improved processes. In some cases better products have resulted and in others the range of products has been augmented to include some on which normal profits could be realized.

The Cosden Oil Corp. at its refinery in Big Spring, Tex., has been conducting for the past year and a half an exhaustive study of the crude it processes with the purpose of developing the manufacture of asphalts. This work has resulted in placing an asphalt unit in operation in the Big Spring plant. A study of the crude revealed that it was well adapted to the manufacture of all grades of this product. Accordingly, a unit was designed for the purpose, using much equipment already at hand in the plant. The unit has been in operation for over six months and results are so satisfactory that an addition is under consideration which will double the present capacity to 2,000 bbls. per day.

Plant Operation

The charging stock to the refinery comprising crudes from Howard, Glasscock and Ector Counties is taken principally from the Cosden Oil Corp.'s wells. It averages 29 gravity. The crude for the entire refinery is charged to a large gas-fired tube still and then is flashed in a vaporization chamber. The overhead vapors from the chamber enter the distillation column. Here gasoline is taken overhead and naphtha, distillate and two gas oil streams are cut at points along the column. The bottoms from this tower representing about 20 per cent of the charge and averaging 13-14 gravity are run to a light heater and flashed into a vacuum tower operating at 27-29 inches Hg. vacuum. Of this charge approximately 25 per cent is taken overhead as a heavy gas oil cracking stock, and the remainder, representing 15 per cent of the original crude charge, is withdrawn at the bottom as asphalt stock. To this is added the unvaporized fraction from the base of the flash chamber.

Blending Process

Approximately half of the asphalt is taken from this stock, and blended and marketed as finished product. The specifications of the remaining grades require blowing. For this purpose four obsolete cracking stills were utilized. These old type Jenkins units equipped with circulation tubes underneath were adapted with little conversion to the blowing process. The reflux towers atop each still are used as vacuum towers. While being blown, the stock circulates through the inclined tubes and the still proper. As heat is applied only at the tubes, overheating with resultant coking and burning is precluded by the velocity of the stock at that point. The effect of this treatment is very evident in the finished product which shows a negative test for the Oliensis spot test. This test, recently devised by the U. S. Bureau of Roads, has been adopted in practically all of the states at the present time. It employs a special naphtha solvent and subjects the asphalt to a rigid test for burned or cracked content. The blowing process is carried on in batch operation. The various grades are blown to specification and are finished and ready for shipment when withdrawn from the units.

At present the 13 state, standard specification grades of roofing and paving asphalts are made, and in addition, 10 or 12 special specification grades. The market is strongest at this period of the year for roofing grades, but a large amount of paving asphalts, fiber coatings and roof paints is also being manufactured.

Shipping Facilities

Of this production about 25 per cent is shipped from the plant in drums. The remainder is transported in insulated tank cars equipped with steam coils for unloading the more viscous grades. The refinery includes facilities for filling 400 drums per day and serving five tank cars simultaneously at the loading rack. The control laboratory for the asphalt plant contains equipment for testing the ductility, penetration and other characteristics covered by the A.S.T.M.

The research laboratory is maintained to develop grades for new specifications and to further study the crude for other possible products. The crude supplied to the refinery offers possibilities for the quality manufacture of practically the full range of refinery products. Asphalt is shipped to points in Texas, Oklahoma, New Mexico, Kansas and other points as far distant as Minnesota, Wisconsin, and the Dakotas.

INTERNATIONAL CONGRESS

The International Congress of Mining, Metallurgy and Applied Geology will be held in Paris, France, October 20-26, 1935, and will be attended by technicians and specialists from all parts of the world. The sessions on petroleum and applied geology will be of particular interest to technical men in the industry and a brief synopsis of the preliminary program is given here:

Petroleum Session—Drilling, production by drilling and sundry methods and transportation and storage.

Applied Geology Session—Deposits of magmatic origin, deposits of sedimentary origin, petroleum, geology applied to civil engineering, geology applied to agriculture, hydrology and mineral waters, geophysics, mining economics and teaching and research institutes.

For further information regarding this meeting or for advice about preparing papers to be submitted before any of these meetings a member of the committee has asked that communications be sent to The Oil and Gas Journal, editorial department, and they will then be directed to the proper party handling the particular detail.

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When you skim crude oil you add value to a part of it and subtract value from the rest

When you Dubbscrack any kind of oil you multiply the value of a large part of it and add value to all the rest of it

That adds to the earnings of your plant and the satisfaction of your stockholders It multiplies your profits

And subtracts from your worries

The chemical cop subtracts the gum-bugs from your cracked gasoline and subtracts the cost of treating from your budget—and adds to profits

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NEWS FROM FOREIGN LANDS

U. S. S. R.

The Amtorg Trading Corp., New York, has closed a contract with the Alco Products, Inc., covering the furnishing of equipment for a refinery being built at Ufa located in the Baskkirian Republic in southern Urals, U.S.S.R. The plant will have a capacity of 12,000 bbls. daily. The contract involves approximately $1,200,000 and is the largest to be let by Amtorg for oil refinery equipment in several years.

The new equipment will include facilities for crude oil topping, cracking, reforming and treating. The plant will operate with a new crude from the Sterlitamak Field. This is one of the new fields that has been opened up in the territory along the western slope of the Urals. It is anticipated that additional production will be found which will necessitate an increase in crude oil capacity at the refinery. The field and refinery location is about 1,500 miles northeast of the older fields at Baku and Grozny.

Much of the equipment will be fabricated at the Dunkirk, N. Y., plant of the Alco company. Several firms will be engaged in furnishing auxiliary equipment. A number of Alco engineers will assist the engineers of the U.S.S.R. in the construction of the plant.

This is the first large order placed with an American company for refinery equipment since 1931. During the period between 1927 and 1931 approximately $3,000,000 yearly was spent in the purchase of American refinery equipment.

PRODUCTION

The following table gives the production of the Shell units for the four weeks ending June 8 and May 13 (data in tons):

	June 8	May 13
Caribbean Petroleum Co.:		
Mene Grande	1,234,100	1,094,900
Venezuelan Oil Concessions, Ltd.:		
La Rosa	$21,100	$19,600
Lagunillas	1,933,600	1,939,700
Concepcion	110,400	111,100
La Paz	13,600	14,000
Colon Oil Corp.:		
Colon	*400,100	†395,900

*June 7. †May 14.

The following table gives the crude oil production of the International Petroleum Co., Ltd., in Peru and Colombia (data in barrels):

PERU

	1935	1934
May	1,281,150	1,085,193
April	1,160,942	1,037,127
January to May	6,614,956	5,439,245
Daily average	50,124	45,227

COLOMBIA

May	1,486,896	1,730,095
April	1,377,299	1,193,736
January to May	7,196,355	5,857,229
Daily average	59,220	48,800

IRAQ

The Iraq Petroleum Co., Ltd., has closed a contract with the Foster Wheeler Corp. covering the construction of a crude oil stabilization plant to be erected near the Kirkuk Field from which the crude oil supplies for the Iraq pipe line are obtained. It is understood that the distillation unit will represent an expenditure of approximately $1,000,000.

The purpose of the operation is to remove fixed gases from the crude oil including hydrogen sulphide gas before the crude is delivered to the pipe line. The pipe line at present is handling approximately 85,000 bbls. of crude oil daily with deliveries at Tripoli and Haifa on the Mediterranean Sea.

VENEZUELA

Crude oil production in Venezuela totaled 12,454,032 bbls. in May based on preliminary reports. This daily average of 401,754 bbls. represented an increase of nearly 20,000 bbls. over the daily average for April and 29,000 bbls. more than the daily average in May, 1934. The May daily average was the largest of any month this year with the exception of January.

The following tables gives the crude oil production in Venezuela by fields and companies for May, 1935 and 1934 (data in barrels):

PRODUCTION BY FIELDS

	May, 1935	May, 1934
Lagunillas	6,654,876	5,807,530
Quirequiri	1,844,091	1,247,290
La Rosa-Ambrosia	1,813,335	2,058,600
Mene Grande	1,211,200	1,262,900
Tarra	438,310	564,330
Cumarebo	272,052	335,990
Concepcion	123,960	157,700
El Mene	80,600	87,250
La Paz	15,608	26,960
Total	12,454,032	11,542,340
May (daily average)	401,743	372,333
April	382,378	367,333
March	371,900	351,630
February	390,029	348,900
January	405,156	350,270

PRODUCTION BY COMPANIES

Lago Petroleum Corp.	3,733,372	3,656,330
Venezuelan Oil Concessions	2,971,946	3,022,900
Creole Petroleum Corp.	2,563,604	1,832,900
Caribbean Pet. Co.	1,211,200	1,262,820
Colon Oil Corp.	438,310	564,320
British Controlled Oilfields, Inc.	80,600	87,280
Total	12,454,032	11,542,340

The increase shown in the table, materialized despite all fields were running behind 1934 with the exception of Lagunillas in the lake region and Quirequiri in eastern Venezuela. The latter continues to be the largest contributor to increased production in Venezuela, the daily average of 59,500 bbls. establishing a new record with almost a 50 per cent over May, 1934. In the Lagunillas area a few additional wells are being completed and the productions of some of the older wells are being increased by new operating methods. The Mene Grande Field, after a substantial decline in production in late March and early May due to the low water level at the bar connecting Lake Maracaibo and the Gulf of Venezuela which made it impossible to continue normal shipments from the field, is now producing nearly 40,000 bbls. of crude oil daily. This is approximately the same as in May, 1934.

The production in the Tarra fields by the Colon Development Co., Ltd., showed a small increase in May over April, but it was 22 per cent behind May, 1934. The company in its annual report released the first of the month explains the development work that has been carried on in the Tarra fields. Particular interest attaches to the Las Cruces, which accounts for approximately 60 per cent of the company's total crude oil production. There have been various reports regarding certain tests in that field shown in the accompanying sketch map. Regarding Las Cruces the annual report said: "After the initial test carried out at the end of 1933, T.77, the well designed to exploit the deeper levels hitherto only reached in part by T.51, was deepened to 4,325 feet and brought in in February at the initial rate of 1,840 bbls. daily. The results of this well and the steady production of the earlier well, T.51, appeared to indicate the existence of substantial reserves in these deeper horizons. Corresponding results were, however, not obtained by two further similar wells, T.79 and T.80, which were drilled during that year. These wells were located in the neighborhood of T.13 and T.68, respectively, where the producing horizons were expected to be encountered under favorable conditions and where the fullest use could be made of existing roads and other facilities. T.79 was spudded in in February, and after passing through the formations from which T.51 and T.77 were producing, it was continued in order to establish whether deeper productive layers existed. At a depth of 5,080 feet a strong flow of water was encountered, which necessitated prolonged plugging operations; but mechanical difficulties were experienced and complete success in excluding the water was not realized. The well

Sketch map of Las Cruces Field, Venezuela, Colon Development Co., Ltd.

was finally brought into production in December at the initial rate of 550 bbls. per day, but produced spasmodically with considerable water and has since been put on the pump. T.80 was spudded in in March and after delays due to fishing jobs, was brought in in August at the initial rate of 460 bbls. per day. Arrangements had meanwhile been made for the drilling of a further well to these levels in a different part of the field and, as T.81, it was spudded in in September.

In the light of the information obtained by core recoveries and electrical surveys of the formations passed through in the above-mentioned wells, it appeared likely that the oil accumulation in the shallower formations, from which the greater part of the Las Cruces production is drawn, extends somewhat further to the west than previous evidence had indicated. In order to lose no time in testing this possibility, T.81 was suspended at a depth of 292 feet and operations were diverted to the deepening of T.13. This deepening was successful, the well being brought in in December at a depth of 3,009 feet at the initial rate of 1,950 bbls. daily, subsequently improving to 2,230 bbls. daily.

The production of old wells at Las Cruces was satisfactorily maintained, and was augmented by the yield of new wells brought in during the year. As in the past, the output of each well was carefully regulated, in order to control the water-drive conditions with which the greater part of the production is associated. Pumping units were installed on five wells, and as at the end of the year there were 22 producing wells at Las Cruces, of which 9 were flowing.

RUMANIA

With an increased crude oil production and refinery output, Rumania has been able to increase its exports of products to other countries according to an official report. Exports for the first quarter according to the Government report totaled 1,489,812 tons, an increase of 160,589 tons or 12 per cent over the same period in 1934.

It is interesting to note in this connection that the increase in exports from Rumania are only slightly less than the decrease in exports of crude oil and petroleum products from Russia. Exports from the latter country for the first quarter totaled 1,022,477 tons, a decrease of 176,836 tons when compared to the first quarter of 1934. This decrease in Russian exports has opened markets for the Rumanian products which otherwise could only have been obtained by lowering prices. The following table gives the Rumanian exports for the first quarter of 1935 and 1934 (data in tons):

	1935	1934
Gasoline	461,966	410,624
Fuel oil	370,835	386,400
Kerosene	298,870	243,200
Gas oil	260,965	241,805
Crude oil	74,668	21,646
Lubricating oil	12,152	9,415
Asphalt	8,853	14,269
Major Buyers of Products		
Italy	261,237	202,507
England	169,273	175,096
Holland	142,279	83,260
Germany	129,965	30,652
France	115,073	167,384
Spain	100,204	63,321

GREAT BRITAIN

The regulations covering leasing and prospecting for crude petroleum in Great Britain under the 1934 Petroleum Act passed by Parliament become effective June 17. Information on method of application, fees, size of tracts and other pertinent information is available from the H. M. Stationery Office at Adastral House, Kingsway, London W. C. 2. Application for licenses under this act can be made with the Petroleum Department Dean Stanley St. Millbank, London.

ITALY

Azienda Generale Italiana Petroli (A. G.I.P.) largest of the Italian owned oil companies controlled by the government has let a contract for the construction of a crude distillation unit at its refinery located at Forto Marghera, near Venice. The unit, which will have a capacity of 7,000 bbls. daily, will be constructed by the Foster Wheeler Corp.

Search for Ordovician Oil Goes On in Many Counties in West Texas

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., June 17.—With no major oil fields having been discovered in Texas since 1932, when the Conroe Field was opened in the Gulf Coast district, and storage being drawn upon nearly constantly during the past few years, major companies are beginning to wonder where they are to find more large fields to meet the ever increasing demand for crude.

Major companies and a few independent operators have drilled a number of Ordovician tests in the West Texas district, covering spots as far east as Concho and Kimble County and as far west as Culberson County. But so far the only Ordovician production uncovered is in the Big Lake Field, where the Big Lake Oil Co. has drilled 16 deep producers and Group No. 1 Oil Corp. has drilled a total of nine. However, a number of these wells have fallen off materially in production, some ceasing to produce and necessitating the reworking and installation of special equipment to bring them back on production. Two deep tests in this field have been abandoned, one a former producer owned by the Big Lake Oil Co., and the other an east edge test drilled by the Group No. 1 Oil Corp.

The first deep producer completed in this field, and the first Ordovician producer to be completed in the entire district, was Texon Oil & Land Co.'s (Group No. 1 Oil Corp.) No. 1-B University, in Section 39. It was originally a Permian lime producer but in 1926 the company started deepening in quest of the deeper pay zone. It was completed in December, 1929, flowing 70 bbls. the first 24 hours, but gradually increasing in production to 2,590 bbls. per day. The formations drilled in this test were as follows:

Formations—	Depth (ft.)
Cretaceous	0–510
Triassac	510–840
Permian	840–8,250
Pennsylvanian	8,250–8,306
Simpson (Ordovician)	8,306–8,512
Ellenberger (Ordovician)	*8,512

*Total depth.

The Ellenberger lime is the producing section of the Ordovician.

Gravity of the oil found in the Ordovician producers in the Big Lake Field runs as high as 63 degrees. The discovery well came in producing 55 gravity.

Oil and Gas Analyses

Following is an analysis of the oil and gas out of two representative wells in the deep pay horizon in the Big Lake Field:

GROUP NO. 1 OIL CORP.'s NO. 1-B UNIVERSITY (Discovery Well)
Oil Analysis

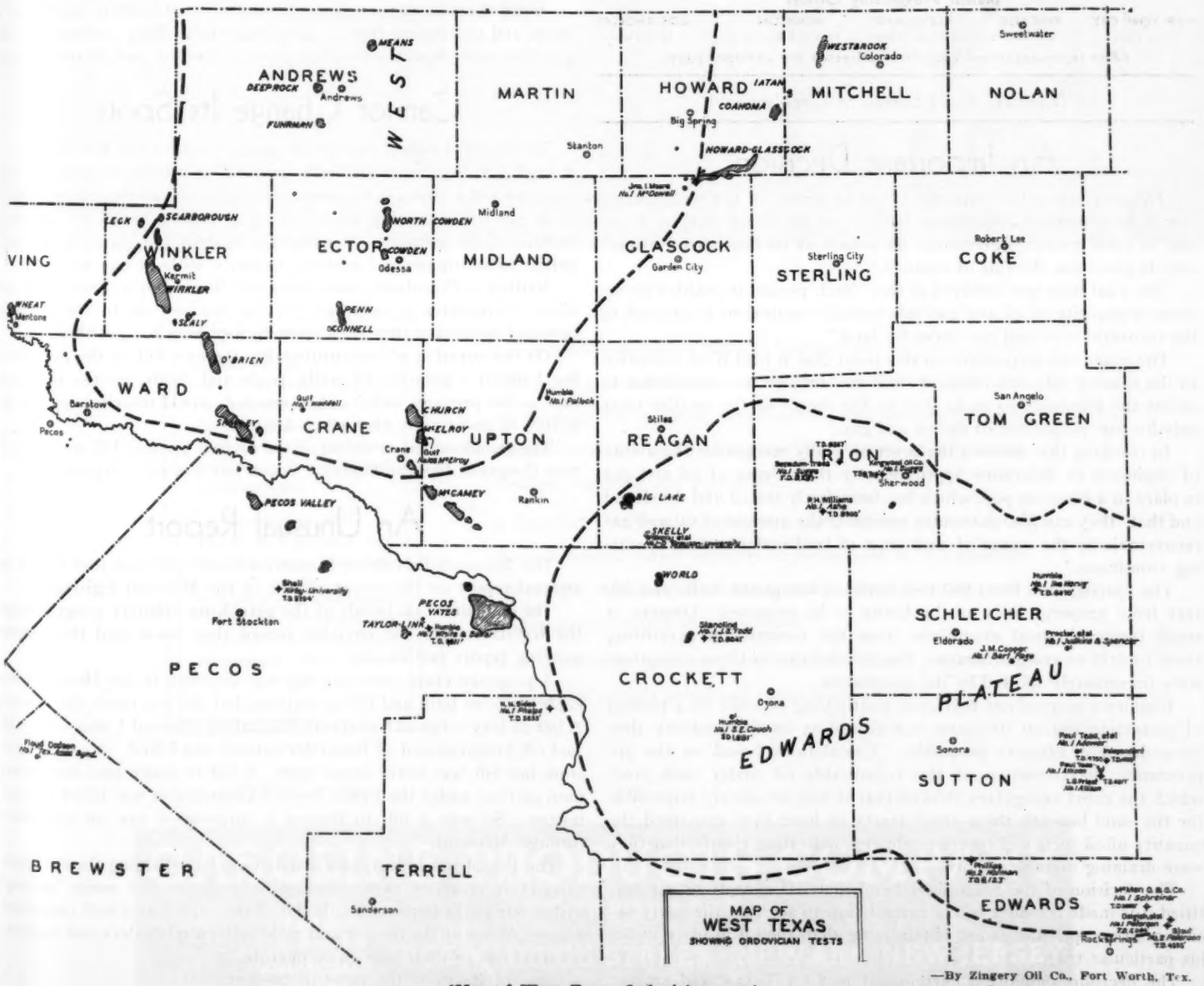
Gasoline	66.9%
Gravity 59.7	
Kerosene	24.6
Gravity 41.3	
Gas oil	6.5
Gravity 33.7	
Bottoms	1.0
Loss	1.0

BIK LAKE OIL CO.'s NO. 4-C UNIVERSITY
Gas Analysis

Methane	79.2%
Ethane	10.5
Propane	5.8
Butane	2.9
Pentanes and higher	1.6

The grade of oil found in the Ordovician lime in the Big Lake Field is one of the principal reasons for major companies seeking other deep producing fields in the West Texas district. Gravity of the Permian lime oil ranges from 28 to 35 degrees, most of it being around 30 degrees. The Permian lime oil has a high sulphur content as a general rule, which is not

(Continued on Page 32)



(Map of West Texas Ordovician tests)

—By Zingery Oil Co., Fort Worth, Tex.

THE OIL AND GAS JOURNAL

Producing Refining Natural Gasoline Pipe Line

Published weekly by

THE PETROLEUM PUBLISHING COMPANY

114-16 West Second Street, Tulsa, Oklahoma

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Member, Audit Bureau of Circulations

An Important Decision

The decision of the Supreme Court of Texas on the well spacing law is of immediate importance because of its effect in East Texas and of even greater significance by reason of its bearing on ownership in place and the rule of capture.

The vital principle involved is that "each person is entitled to recover a quantity of oil and gas substantially equivalent in amount to the recoverable oil and gas under his land."

The court was so positive on this point that it held if an exception to the spacing rule was justified "it is the duty of the commission to adjust the allowable so as to give to the owner of the smaller tract only his just proportion of the oil and gas."

In reaching this decision the court officially recognized the ability of engineers to determine approximately the volume of oil and gas in place in a common pool which has been fairly tested and developed and that "they can also determine equitably the amount of oil and gas recoverable by the owner of each tract of land under certain operating conditions."

The spacing rule fixed 660 feet between completed wells and 330 feet from property lines as the limits to be observed. Owners of small tracts obtained exceptions from the commission permitting them to drill to avoid drainage. The possibilities in these exceptions were immediately spotted by the speculative.

Engineers pointed out that such multiplying of wells on a pretext of protection against drainage was absurd as on the contrary they were draining adjacent properties. Calculations based on the approximate determination of the recoverable oil under each tract which the court recognizes showed that it was absolutely impossible for the sand beneath these small tracts to have ever contained the quantity of oil their wells were producing, indicating clearly that they were draining their neighbors.

The decision of the court should end that. If exceptions are justified it is made the duty of the commission to see that the party securing an exception does not obtain more than the oil in place under his particular tract.

The decision should aid curtailment in East Texas, and protect property owners and law abiding operators. On a broader scale it suggests a substitute for the rule of capture which has been at the bottom of most of the haste and waste which have brought overproduction and its train of troubles on the industry.

Creative Salesmanship

Here and there throughout the country local newspapers awake to opportunity to be of service to their readers are marking the opening of the summer motoring season by publishing maps and pictures of attractive evening or week end tours in their vicinity.

This is a service which The Oil and Gas Journal believes, as it did seven years ago when it originally suggested it, should be taken up by the gasoline industry. Now that the public is buying new cars and again thinking of enjoying life would be a good time to begin.

What the oil business, practically all business for that matter, needs is less competitive salesmanship and more creative salesmanship, less scrambling for a competitor's gallonage and more effort to increase consumption.

It is curious to recall that one of the objections raised to the suggestion for a concerted drive by gasoline companies to induce the public to increase their use of cars and gasoline by evening or week end trips to attractive places was that some competitor might benefit.

The major point that it would enlarge the market for gasoline and motor oils was treated as trivial in comparison, yet any increase in consumption would mean more to the industry at large than any possible switching of gallonage from one account to another.

Since the newspapers think the public is sufficiently interested in week end or evening trips to give space to inviting outings possibly gasoline sales departments may give it a second and better thought.

Cannot Change Its Spots

The leopard cannot change its spots. Neither can the Thomas oil control bill. As "amended" and "revised" it retains its objectionable features and is just as obnoxious and dangerous to the oil industry.

It persists in setting up a Federal petroleum board to take over control of the industry. It continues to limit the industry's participation to an ornamental advisory capacity without any authority.

Neither a Petroleum Administrative Board nor a Petroleum Advisory Committee is necessary to the industry or to the country, however necessary they may seem to aspirants for positions.

On the question of constitutionality the new bill, in the provisions for Federal regulation of wells, pools and fields, invites the same fate as the previous setup and, if enacted, would merely keep the industry in uncertainty that much longer.

The abandonment or defeat of the revised Thomas bill would show that Congress, like the Supreme Court, has a mind of its own.

An Unusual Report

The Missouri Petroleum Industries Committee has just issued an unusual report on the recent session of the Missouri legislature.

The committee on behalf of the petroleum industry congratulates the legislators for the enviable record they made and the accompanying report justifies it.

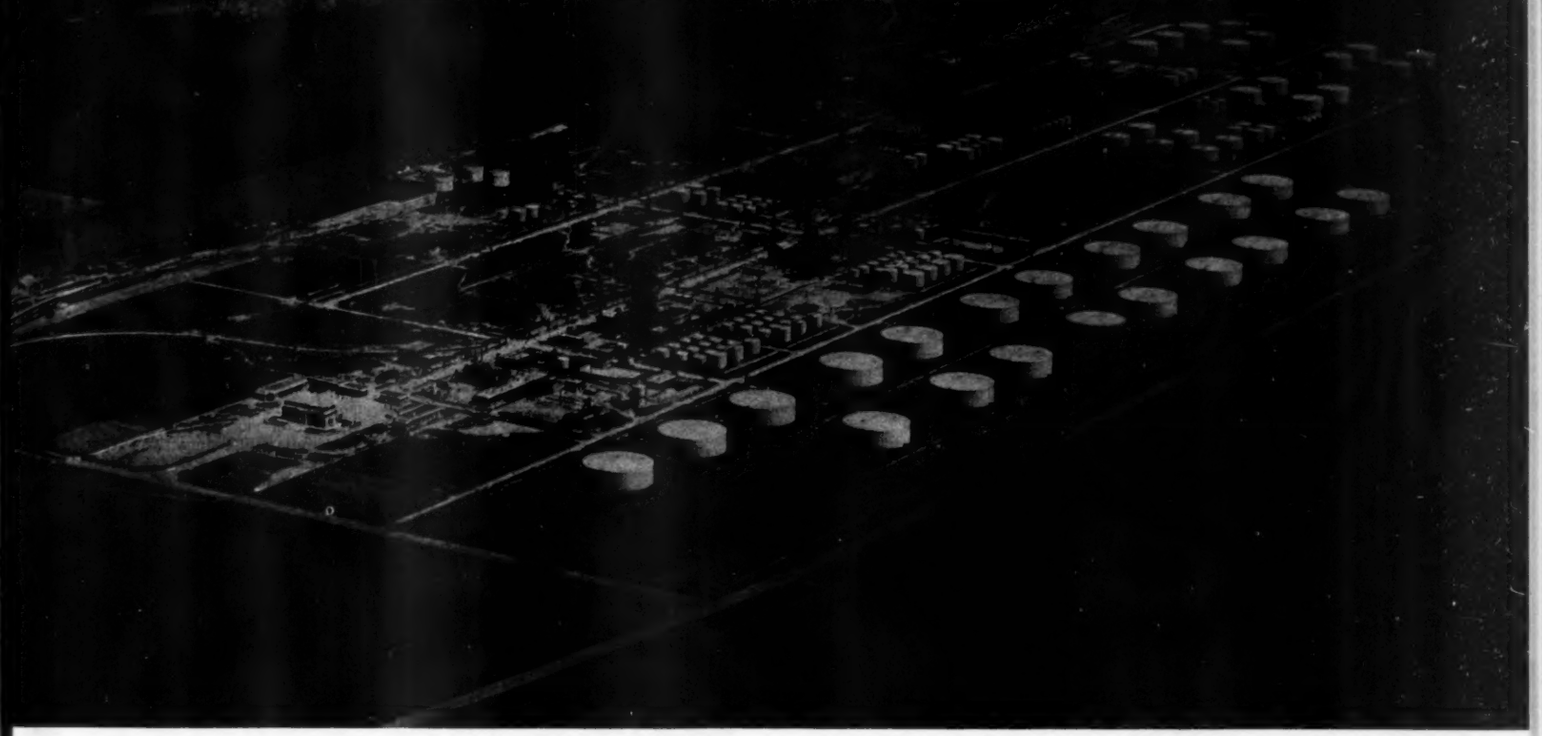
A proposed chain store tax bill was amended in the House to exclude gasoline bulk and filling stations, but did not reach the Senate. A bill to levy a tax of 6 cents on lubricating oils and 1 cent on crude, fuel oil, kerosene and all liquid derivatives was killed. A county gasoline tax bill was never acted upon. A bill to make pipe lines common carriers under the Public Service Commission was killed in committee. So was a bill to impose a corporation tax on pipe lines through Missouri.

The Petroleum Industries Committee acknowledging the energetic support it received says: "Occasionally there was some 'sniping' within our ranks but as a whole the oil men acted as a well organized group. Many of the busiest and most influential dealers and marketers went out of their way to co-operate."

The results show the value of co-operation.

. . . in FRANCE

during 1935 a major oil company's second refinery will commence operation of a cracking unit under a Gasoline Products Company license



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- **Economic conditions make it essential for a refiner, when considering an investment in cracking equipment, to select an experienced licensing organization—one whose service is comprehensive enough to secure the benefits of the latest designs, methods and equipment.**
- **Gasoline Products Company by coordinating the technical data of several major refinery organizations is in a position to design combination cracking units adapted to the individual requirements of the refiner.**
- **A constantly increasing number of refiners are availing themselves of this broad and comprehensive service.**

GASOLINE PRODUCTS COMPANY

INCORPORATED

11 COMMERCE STREET • NEWARK, NEW JERSEY

Dehydrated Weather and Removal of All Doubt Concerning Tax Needed by Group 3 Market

By T. F. SMILEY

Two things might be named as prime requisites for a smart upturn in the gasoline and lubricating oil markets in the Group 3 area, to-wit: (1) A spell of dehydrated weather. (2) Complete removal of uncertainty regarding the federal tax.

Even with flooded or mud-plastered roads and with doubt about the tax still lurking in some minds the tone of the motor fuel market was continuing to improve this week, and although tank car prices were unchanged prophets of a rise in the near future were not hard to find.

Nobody Expects Tax to Be Dropped

Nobody, so far as could be ascertained, believed there was more than a Chinaman's chance of the tax of 1 cent a gallon on gasoline and 4 cents on lubricants being discontinued after June 30, when the present law imposing it expires. Belief that this burden on the motorist would remain was strengthened by the action of Congress Monday in passing the nuisance tax bill, which includes the gasoline and lubricants items. Nevertheless, opposition to the tax is so bitter that jobbers, even though they expect prices to go up, are disinclined to fill their storage, fearing forecasts concerning Senate action on the bill might go wrong after all, leaving them with tax-paid material on their hands July 1 and no way of passing the tax on to the customer.

Notwithstanding the shadow of uncertainty, jobber interest was a little livelier than last week, with inquiries looking to laying in supplies for the Independence Day holiday. It is safe to say that with the tax question settled normal buying of both gasoline and lubricating oils would be resumed at once and that favorable motoring conditions would bring out a big volume of additional business.

Gasoline stocks throughout the whole Mid-Continent territory were reported well bought up in the last week. Some integrated companies which have been replenishing their own inventories through purchases from independents found no material was available from that source and turned directly to East Texas to fill their needs. This situation is said to have arisen from the fact that various independents who had been depending upon big companies to absorb their surplus stocks have been getting rid of their entire output through regular jobber outlets recently, leaving them with nothing for their "big brothers" in the inter-refinery buying.

Troubles Fail to Upset Market

Comment has been stirred by the excellent behavior of the gasoline market in spite of the procession of troubles besetting it. In part explanation of this it is pointed out while abominable weather conditions have interfered seriously with use of the family car, the enormous consumption of motor fuel by bus lines and truck fleets has gone on virtually uninterrupted. As for impaired gallonage thus far this season as a result of road conditions upsetting plans for vacation tours, it is not to be forgotten that much of this business is simply postponed, not permanently lost; and those whose faith in the weather man has not been utterly destroyed express belief that the sun will shine again one of these days, accompanied by a quick pickup in the motor fuel trade.

Action of the Standard Oil Co. (Indiana) last Friday in advancing the tank wagon and service station prices of gasoline three-tenths cent throughout its territory with the exception of Michigan had a bracing effect on the Group 3 market.

Notwithstanding reports that large quantities of illegal gasoline in East Texas are being disposed of by trucks operating inside the State, the situation in that area is said to be undergoing improvement. For one thing refiners who have been disposing of material made from crude of dubious origin by shading their dock prices are understood to be running out of crude and to be facing difficulty in getting fresh supplies. It is estimated that more than 277,000 gallons of illicit motor fuel were disposed of by truck out of East Texas during May, but it is recognized that the operation of various rackets there is becoming increasingly difficult.

Tighter Natural Gasoline Market Seen

Natural gasoline showed no sign of losing the firm hold it has had for months. It is estimated that the curtailment of gas production in the Texas Panhandle will reduce the output of natural gasoline by 400,000 gallons daily. The effect of such a pronounced diminution of supply is certain to be a marked tightening of the market.

It is looked upon as noteworthy that the tank car price of 26-70 should hold at 3 cents, with no indications of weakening, in a period which normally is the poorest of the year. Instead of quotations showing any tendency to sag, the feeling in the trade is that a further upturn in refinery gasoline quotations would be accompanied by a corresponding rise in natural.

Refiners are using more natural than in former years. There was an increase in the demand for the stabilized grades last year, and the demand has been still

(Continued on Page 28)

Refined Oil Market Barometer

Contrasting conditions appear in the refined markets of different areas. In the Mid-Continent, Central and Middle Western regions gasoline, while not buoyant, shows evidence of underlying strength, which is expected to manifest itself in the form of higher wholesale and retail prices with the advent of favorable motoring weather. On the East Coast inactivity pervaded almost the whole list of oil products. California's gasoline market is upset by another price war. Markets in other districts are colorless. Feeling is fairly general that the market skies will clear within a few weeks and that July will see profitable business.

Mid-Continent.—Refined and natural gasoline firm. Kerosene softening. Furnace oil off. Bright stocks up. Wax dull.

East Coast.—Gasoline lacks vigor notwithstanding increased consumption. End of tax uncertainty expected to stimulate general market.

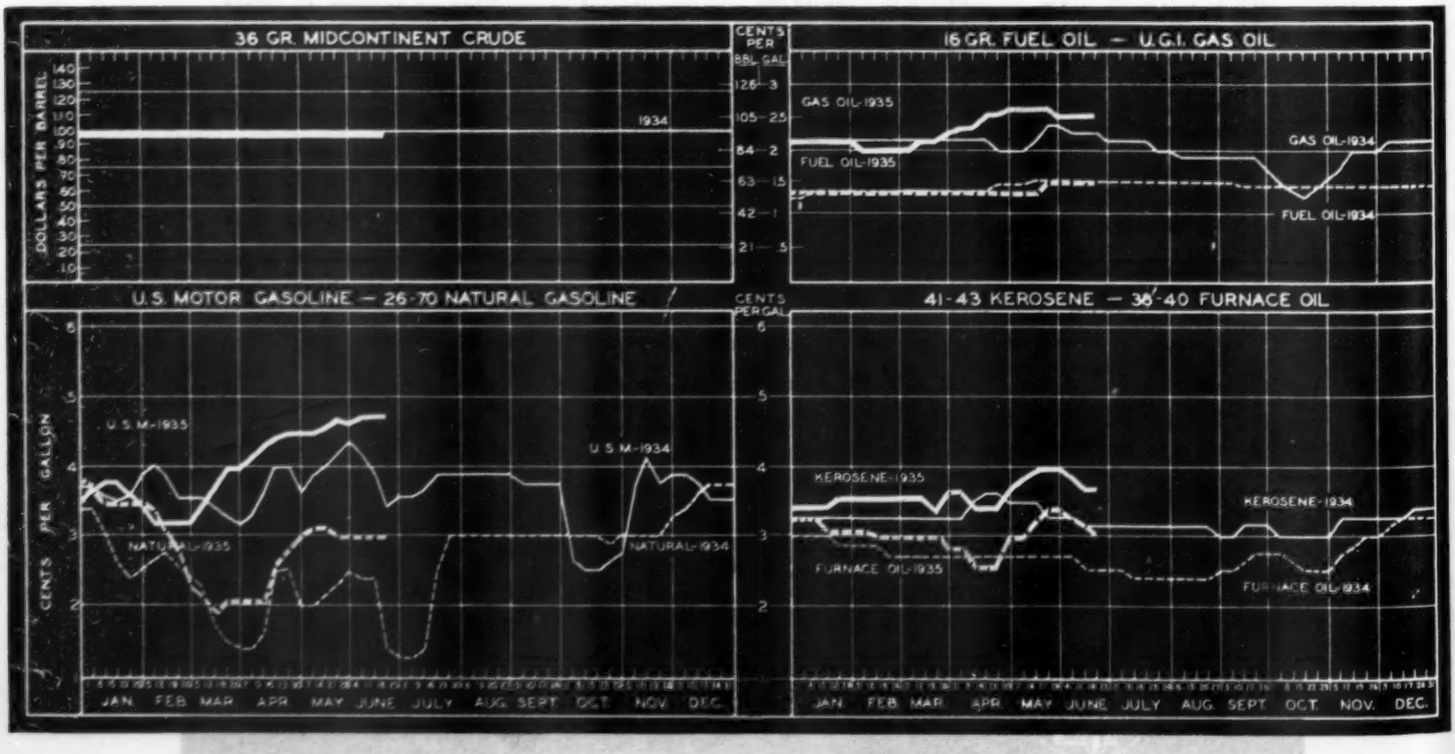
Gulf Coast.—Market slower, with slackening of inquiries. Fuels firm. Gasoline holding. Kerosene easier. Lubricants marking time.

Pennsylvania.—General market dull, with no changes in prices.

California.—Market unsettled. Gasoline prices recede.

Chicago.—Gasoline firm. Demand slightly better. Burning oils quiet.

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)



Diesel Fuel Oils Lower and Bright Stocks Are Higher in Eastern Coast Refinery Markets

By C. O. WILLSON
New York Bureau, The Oil and Gas Journal

NEW YORK, June 17.—The refined market in this territory over the past week presented a somewhat dull appearance so far as spot trading was concerned. Only two price changes were made generally effective. The Standard Oil Co. of New Jersey and other sellers effective June 15 reduced the price of 28-30 Diesel fuels (ship's bunker) from $1.89 to $1.65 per barrel in the New York harbor area. There is an additional charge of 6½ cents per barrel. At the same time, the company reduced the same product at New Orleans and Baton Rouge, La., from $1.70 to $1.50 per barrel. It was explained that this reduction was made in order to bring the bunker prices in line with the shore quotations which were also recently reduced. In the lubricating oil export market, several manufacturers have advanced their quotations on Pennsylvania bright stock in barrels to 24 cents, the new price being an increase of one-half to 1 cent per gallon.

The dullness included gasoline although all indications pointed to the largest retail consumption of the year for this territory over the past week. Refiners with their own marketing facilities have increased their shipments from plants and the volume of their contract business with jobbers has also increased. Despite this situation spot trading unquestionably has been light. Several reasons are offered in explanation of the fact that spot traders have reduced their purchases below current requirements over the past two weeks. With the passing of the NRA there have been a few in the trade who immediately took the position that this meant a return to low prices and as buyers they have naturally reduced their purchases to a minimum.

Watching Tax Situation

It is also said that many jobbers are postponing their purchases expecting that the 1-cent federal gasoline tax and 4-cent lubricating oil tax will cease to be effective on June 30, the expiration date for the law under which these taxes have been collected over the past year.

On the same date the import taxes on crude oil and petroleum products expire. The taxes which have been effective since June, 1932, are one-half cent on fuel oil and gas oil, 2½ cents on motor fuels, 4 cents on lubricating oils and 1 cent per pound on wax. It is pointed out that should these taxes be rescinded at the end of the month it would have an immediate and direct reflection in seaboard markets, particularly in the case of heavy fuels and gasoline. This import tax has practically shut out imports of all light oils and greatly reduced the imports of crude oil and heavy fuel oils.

At this writing the situation at Washington providing for a continuance of these import and domestic taxes on crude oil and its products is confusing. Those in close touch with conditions, however, were in agreement that all the taxes would probably be continued through laws to be enacted before the end of the month. A long fight has been made to have the federal taxes on gasoline dropped, based on the contention that this tax should be confined to the states. While some support has been obtained in Congress, the need of large revenues, it is believed, will in the end mean that the tax will be continued for at least one year. Some fear has been expressed that the tax rate might be increased and the application of a new law widened to include other products. In regard to the import taxes, there is no organized opposition within or outside the industry with substantial interests favoring their continuance. Due to this condition it is assumed by those in direct touch with conditions at Washington that the excise taxes will be continued.

May Stimulate Buying

This situation may serve to stimulate buying just as soon as it becomes definitely apparent that all the taxes are to be continued and the buyers are convinced that they have nothing to gain by further postponements. A sales executive of one company with this situation in mind expects a heavy jobber demand the last few days of June.

Summer Consumption

So far as the writer has been able to check oil companies operating in this territory without exception anticipate a record gasoline demand this summer, regardless of whether they expect their own gallonage to reach a new peak. This prediction is based on the demand so far this year—especially over the past 60 days—of the individual companies together with the available information from the Bureau of Mines and gasoline collection departments of the various states. Data on motor vehicle production and registrations also point to a record demand.

So far as state gasoline collections are concerned complete data have been announced for the first three months. For this section the state collections for the first quarter with comparative figures for the same period in 1934 are as follows (data in thousands of gallons):

	1935	1934
Maine	17,138	16,183
New Hampshire	11,908	10,971
Vermont	7,270	6,841
Connecticut	48,138	46,041
Massachusetts	109,764	109,371
New York	324,157	303,997
Pennsylvania	233,156	228,319
Rhode Island	20,990	21,140
New Jersey	146,077	138,493
Maryland	41,956	40,054
Delaware	8,165	7,602
Total	968,699	928,922

This table shows that for the first quarter, gasoline demand based on tax collections was running ahead of last year throughout the eastern part of the United States with the exception of Rhode Island where there was a small decrease. The increases ranged from .3 per cent in Massachusetts to 8.5 per cent in New Hampshire. The average gain of 4.6 per cent was in excess of the increase of 2.7 per cent for the entire country.

March Increase

In regard to the first quarter figures it is significant that all of the increase for this territory came in March.

As in the country as a whole the indicated gasoline demand in this territory for the first two months was practically the same as in 1934, a decrease in January being offset by a small increase in February. March showed a substantial gain over March, 1934, the increase for the 11 eastern states shown in table being 12 per cent. It is this figure that some statisticians emphasize as especially significant in regard to the probable consumption through the summer months. They feel that the large increase in motor vehicle production was not reflected in gasoline demand until March and that this comparative situation will continue over the balance of the year. These observers are predicting at least a 10 per cent increase in domestic gasoline demand over the next three of four months compared with the same period last year.

Although conceding an increase in demand, other observers are more conservative as to the percentage and wish to wait until the April and May comparisons are available before making any definite predictions for the balance of the year. The April reports based on gasoline tax collections that have been announced in this section, all show substantial increases over April, 1934, and the Bureau of Mines data covering domestic gasoline demand for the entire country based on refinery shipments, show a 10 per cent increase over April, 1934.

Retail Gasoline Prices

Another investigation that has been made has to do with retail prices on gasoline. It will come as a surprise to some that net retail prices in this territory, despite the increases of the past few weeks, are still approximately 1 cent under the average of a year ago. This is shown in the following table giving the retail prices, exclusive of taxes, at representative cities in the 11 states whose gallonage figures were given in the previous table (cents per gallon):

NET RETAIL GASOLINE PRICES*
Eastern Area, June 1

	1935	1934
Portland, Me.	13.0	14.2
Manchester, N. H.	13.3	15.2
Burlington, Vt.	14.7	15.8
Hartford, Conn.	12.8	14.4
Springfield, Mass.	12.7	13.5
New York	13.3	13.5
Philadelphia, Pa.	13.0	13.5
Providence, R. I.	12.5	12.5
Newark, N. J.	12.8	13.8
Baltimore, Md.	13.5	14 0
Average	13.1	14.0

*Exclusive of federal and state taxes.

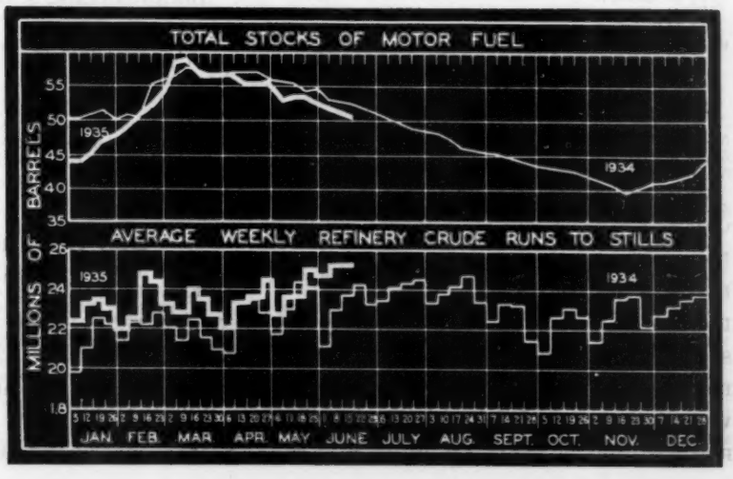
This table shows that on June 1 net retail prices for this territory were .9 cents per gallon under the average for the same date a year ago. These data support the contention of those who have maintained that there should be at least a one-half to 1-cent general advance in this section and there are predictions that this will occur. An advance of that amount would mean $3,000,000 addition-

(Continued on Page 43)

American Petroleum Institute Weekly Refinery Statistics

Week Ending June 15, 1935

	Capacity reporting per cent	Daily crude runs (bbls.)	Finished motor fuel (bbls.)	Gas oil and fuel oil (bbls.)
East Coast	100.0	467,000	16,595,000	10,492,000
Appalachian	94.8	108,000	2,197,000	744,000
Indiana, Illinois, Kentucky	95.9	381,000	9,131,000	4,379,000
Oklahoma, Kansas, Missouri	84.8	266,000	4,880,000	4,200,000
Inland Texas	48.5	94,000	1,135,000	1,930,000
Texas Gulf	96.4	569,000	5,457,000	9,627,000
Louisiana Gulf	96.4	118,000	1,440,000	3,721,000
North Louisiana and Arkansas	90.0	49,000	279,000	333,000
Rocky Mountain	61.9	40,000	928,000	786,000
California	92.6	449,000	9,511,000	63,950,000
Total United States	89.5	2,541,000	51,553,000	100,162,000



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

	June 18		June 11	
OKLAHOMA (Group 3)—				
U. S. Motor grades:				
Below 63 octane	.04¾	.04⅞	.04¾	.04⅞
63-70 octane	.05⅝	.05¾	.05⅝	.05¾
60-62 400 grade:				
Below 63 octane	.04¾	.04⅞	.04¾	.04⅞
63-70 octane	.05⅝	.05¾	.05⅝	.05¾
64-66 375	.04⅞	.05	.04⅞	.05
68-70 360	.05	.05⅛	.05	.05⅛
NORTH TEXAS—				
U. S. Motor grades:				
Below 63 octane	.04¾	.04⅞	.04¾	.04⅞
63-70 octane	.05⅝	.05¾	.05⅝	.05¾
60-62 400	.04¾	.04⅞	.04¾	.04⅞
64-66 375	.04⅞	.05	.04⅞	.05
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
U. S. Motor grades:				
Below 63 octane	.05¼		.05¼	
63-70 octane	.06		.06	
60-62 400	.05¼		.05¼	
ARKANSAS (Ark., N. La. & Miss. del.)—				
U. S. Motor grades:				
Below 63 octane	.05¼		.05¼	
63-70 octane	.06		.06	
CHICAGO (based on Group 3)—				
U. S. Motor grades:				
Below 63 octane	.04¾	.04⅞	.04¾	.04⅞
63-70 octane	.05⅝	.05¾	.05⅝	.05¾
60-62 400	.04¾	.05	.04⅞	.05
64-66 375	.04⅞	.05	.04⅞	.05¼
68-70 360	.05	.05¼	.05	.05⅛
Aviation fighting grade	.05¾	.05⅞	.05¾	.05⅞
PENNSYLVANIA (inland refineries)—				
58-60 U. S. Motor:				
Below 60 octane	.06		.06	
60-64.9	.07		.07	
65-70 octane	.07¼		.07¼	
64-66 375	.06⅜		.06⅜	
68-70 350	.06⅞		.06⅞	
CALIFORNIA (domestic movement)—				
54-58 U. S. Motor	.05½	.06¼	.06	.06½
58-60 400	.06¼	.06¾	.06¼	.06¾
EAST COAST—				
U. S. Motor, below 60 octane:				
*New York (Bayonne)	.05¾		.05¾	
Baltimore	.05¾		.05¾	
U. S. Motor, 60-64.9 octane:				
*New York (Bayonne)	.06		.06	
Philadelphia	.06	.06¼	.06	.06¼
Boston	.06		.06	
Baltimore	.06	.06¼	.06	.06¼
Charleston, S. C.	.06		.06	
U. S. Motor, 65 and above:				
*New York (Bayonne)	.06¼		.06¼	
Philadelphia	.06¼	.06½	.06¼	.06½
Boston	.06¼		.06¼	
Baltimore	.06¼		.06¼	
Charleston, S. C.	.06¼		.06¼	

*All grades of gasoline one-fourth cent less for small barge shipments.

GULF COAST (domestic)—				
U. S. Motor:				
Below 60 octane	.05	.05¼	.05	.05¼
60-64.9 octane	.05¼	.05½	.05¼	.05½
65 octane and higher	.05½		.05½	

Naphtha

	June 18	June 11
PENNSYLVANIA (inland refineries)—		
50-52 450 (blending)	.05⅞	.05⅞
52-54 450 (blending)	.05⅞	.05⅞
54-56 450 (blending)	.06	.06
CHICAGO (based on Group 3)—		
50-52 450 (blending)	.04¾ .05	.04¾ .05
Cleaners' naphtha, 56-58 gr., 200 i.b.p., 320 e.p.	.06⅞ .07	.06⅞ .07
Lacquer diluent, 180 i.b.p., 250 e.p.	.07⅞ .08	.07⅞ .08
Lacquer diluent, 140 i.b.p., 200 e.p.	.08⅞ .09	.08⅞ .09
Rubber solvent, 68-70 gr., 100 i.b.p., 300 e.p.	.06⅞ .07	.06⅞ .07
Stoddard solvent, 300 i.b.p., 410 e.p., over 83° flash	.06⅝ .06½	.06⅝ .06½
Pet. thinner, 290-300 i.b.p., 410 e.p., over 83° flash	.06⅝ .06½	.06⅝ .06½
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p., 350 e.p.	.06⅞ .07	.06⅞ .07
Petroleum spirits	.05⅞ .06	.05⅞ .06

Natural Gasoline

	June 18		June 11	
OKLAHOMA (Group 3)—				
Grade 26-70	.03	.03⅛	.03	.03⅛
Grade 18-55	.03¾	.04	.03¾	.04
Low vapor pressure grades:				
14 lb. v.p. (max.)	.04¼	.04½	.04¼	.04½
12 lb. v.p. (max.)	.04⅝	.04¾	.04⅝	.04¾
NORTH TEXAS—				
Grade 26-70	.03		.03	
Grade 18-55	.03¾	.03⅞	.03¾	.03⅞
Low vapor pressure grades:				
*14 lb. v.p. (max.)	.04¼	.04⅜	.04¼	.04⅜
*12 lb. v.p. (max.)	.04⅝		.04⅝	

*Nominal.

NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
Grade 26-70	.03¼		.03¼	
CALIFORNIA—				
75-85 375	.04¾	.06	.05	.06

Kerosene

(All kerosene water white)

	June 18		June 11	
OKLAHOMA (Group 3)—				
41-43	.03¾	.03⅞	.03¾	.04
42-44	.03⅞	.04	.03⅞	.04⅛
NORTH TEXAS—				
41-43	.03¾	.03⅞	.03¾	.04
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
41-43	.04⅛		.04⅛	
ARKANSAS (Ark., N. La. & Miss. del.)—				
41-43	.04¼		.04¼	
PENNSYLVANIA (inland refineries)—				
45	.04¾		.04¾	
46	.04⅞		.04⅞	
47	.05		.05	
CHICAGO (based on Group 3)—				
41-43	.03¾	.04	.03⅞	.04
42-44	.04	.04¼	.04⅛	.04¼
CALIFORNIA (Pacific Coast consumption)—				
38-40 high burning test	.04½	.05	.04½	.05
NEW YORK (Bayonne, N. J.)—				
41-43	.05		.05	
GULF COAST (domestic)—				
41-43	.04¼	.04½	.04¼	.04½

Petroleum Coke

(Prices per ton f.o.b. refineries in Chicago area)
(Refineries will absorb freight to 80 cents a ton)

	June 18	June 11
Pile run	6.00	6.00
Direct from still	7.00	7.00
Egg, nut, pea	8.00	8.00
Lump	8.00	8.00

Furnace Oil

	June 18		June 11	
OKLAHOMA (Group 3)—				
No. 1 prime white, 38-42	.03⅛	.03⅜	.03¼	.03½
No. 1 straw, 38-40	.03	.03¼	.03⅛	.03⅜
No. 2 straw, 32-36	.02⅝	.03	.02⅞	.03⅛
No. 2 dark, 32-36	.02⅝	.02¾	.02⅝	.02⅞
No. 3, 28-32	.02⅛	.02⅜	.02½	.02¾
No. 3, 15 and above, 28-32	.02⅜	.02½	.02⅜	.02½
NORTH TEXAS—				
No. 1 prime white, 38-42	.03¼	.03½	.03¼	.03½
No. 1 straw, 38-40	.03⅛	.03⅜	.03⅛	.03⅜
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
No. 2, 32-36	.03⅛	.03¼	.03⅛	.03¼
ARKANSAS (Ark., N. La. & Miss. del.)—				
No. 2, 32-36	.03½		.03½	
No. 3, 28-32	.03¼		.03¼	
CHICAGO (based on Group 3)—				
No. 1 prime white, 38-40	.03¼	.03½	.03⅜	.03½
No. 1 straw, 38-40	.03⅛	.03⅜	.03¼	.03⅜
No. 2 straw, 32-36	.03	.03⅛	.03	.03⅛
No. 2 dark, 32-36	.02⅞	.03	.02⅞	.03
No. 3 zero to 15, 28-32	.02½	.02⅝	.02½	.02⅝
No. 3, 15 and above, 28-32	.02⅛	.02¼	.02⅛	.02¼
NEW YORK (Bayonne, N. J.)—				
No. 1	.05		.05	
No. 2	.04		.04	
No. 4	.04		.04	

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

	June 18		June 11	
OKLAHOMA (Group 3)—				
U.G.I. gas oil	.02½	.02⅝	.02½	.02⅝
No. 4, 24-28	.87½	.90	.87½	.90
No. 4, 15 and above, 24-28	.75	.80	.75	.80
No. 5	.70	.75	.70	.75
No. 6	.67½	.70	.67½	.70
Below 18 fuel oil, industrial	.65	.67½	.65	.67½
NORTH TEXAS—				
U.G.I. gas oil	.02½	.02⅝	.02½	.02⅝
No. 4, 24-28	.87½	.90	.87½	.90
No. 5	.72½	.75	.72½	.75
No. 6	.67½	.70	.67½	.70
Below 18 fuel oil, industrial	.65	.67½	.65	.67½
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
U.G.I. gas oil	.02⅞	.03	.02⅞	.03
10-14 fuel oil, industrial	.75	.80	.75	.80
ARKANSAS (Ark., N. La. & Miss. del.)—				
10-14 fuel oil, industrial	.60	.65	.60	.65
CHICAGO (based on Group 3)—				
U.G.I. gas oil	.02⅝	.02⅝	.02⅜	.02⅝
No. 4, 24-28	.87½	.90	.87½	.90
No. 4, 15 and above 24-28	.72½	.77½	.72½	.77½
No. 5, 18-22	.67½	.70	.67½	.70
No. 6, 10-16	.57½	.60	.57½	.60

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel in all these areas.

PENNSYLVANIA (inland refineries)—				
36-40	.04⅛	.04¼	.04⅛	.04¼
CALIFORNIA—				
Los Angeles:				
30-34 gas oil, per bbl.	1.05	1.25	1.05	1.25
27 plus Diesel	1.05	1.25	1.05	1.25
27 plus Diesel (bunkers)	1.25	1.30	1.25	1.30
12-16 (bunkers at tidewater)	.89	.95	.89	.95
10-16 (cargo lots)	.75	.90	.75	.90
12-17 (tank cars)	.60	.95	.60	.95
San Joaquin Valley:				
10-18 (tank cars)	.60	.75	.60	.75
San Francisco:				
27 plus Diesel, per bbl.	1.25		1.25	
27 plus Diesel (bunkers)	1.35		1.35	
10-16 (bunkers)	1.00		1.00	
GULF COAST—				
28-30 gas oil	.03½	.03⅝	.03½	.03⅝
28-30 Diesel (bunkers)	1.70		1.70	
Bunker C (bulk cargoes)	.85	.90	.85	.90
Bunker C (bunkers)	.95	1.00	.95	1.00
NEW YORK (Bayonne, N. J.)—				
27 plus, gas oil	.04	.04¼	.04	.04¼
28-30 Diesel (lighterage 6½ cents per bbl.)	1.89		1.89	
28-30 Diesel (tank cars)	.04	.04¼	.04	.04¼
*Bunker C (to ocean-going ships in N. Y. harbor)	1.15		1.15	
Industrial fuel (tank cars)	.04		.04	

*Lighterage charge 5 cents per barrel additional.

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.P.A.)

	June 18		June 11	
OKLAHOMA (Group 3)—				
Zero to 10 Cold Test:				
150-3	.10		.10	
180-3	.11¼		.11¼	
180-4	.10¾		.10¾	
200-3	.11¾		.11¾	
200-4	.11¼		.11¼	
240-3	.13¾		.13¾	
240-4	.13¼		.13¼	
280-3	.14¾		.14¾	
280-4	.14		.14	
300-3½	.15¼		.15¼	
400-4	.17¼		.17¼	
100-2 paraffin oil	.05¾		.05¾	
15-20 Cold Test:				
200-3	.10¾		.10¾	
200-4	.10¼		.10¼	
240-3	.12¾		.12¾	
240-4	.12¼		.12¼	
280-3	.13¾		.13¾	
280-4	.13		.13	
GULF COAST—				
Pale Oils:				
200-3	.07	.07½	.07	.07½
300-3	.07½	.08	.07½	.08
500-3½	.08½	.09	.08½	.09
750-3½	.09	.09¼	.09	.09¼
1,200-3½	.09½	.09¾	.09½	.09¾
2,000-4	.09¾	.10	.09¾	.10
Red Oil:				
200-5-6	.07	.07¼	.07	.07¼
300-5-6	.07¼	.07½	.07¼	.07½
500-5-6	.08	.08½	.08	.08½
750	.08½	.09	.08½	.09
1,200-5-6	.09¼	.09½	.09¼	.09½
CALIFORNIA (moving to domestic market)—				
Pale Oils:				
100-2½-3	.07½	.07¾	.07½	.07¾
200-2½-3	.08	.08¼	.08	.08¼
300-3-3½	.09	.10	.09	.10
350-3-4	.10½	.11	.10½	.11
400-3-4	.12	.12¼	.12	.12¼
450-3-4	.12½	.12¾	.12½	.12¾
550-3-4	.13	.13½	.13	.13½
600-3-4	.13½	.14	.13½	.14
Red Oils:				
200-4-5	.08½	.09	.08½	.09
300-5-6	.09		.09	
350-5-6	.10	.10¼	.10	.10¼

400-5-6	.10½	.10¾	.10½	.10¾
450-5-6	.11	.11¼	.11	.11¼
500-5-6	.11½	.11¾	.11½	.11¾
600-5-6½	.12	.12¾	.12	.12¾
700-6½ plus	.13	.13¼	.13	.13¼
750-6½ plus	.13½	.13¾	.13½	.13¾
900-6½ plus	.14	.14½	.14	.14½
PENNSYLVANIA—				
150 vis. at 70° F., 3 color, 400-405 flash:				
Zero pour test	.20½	.21	.20½	.21
10 pour test	.19½	.20	.19½	.20
15 pour test	.19	.19½	.19	.19½
25 pour test	.18	.18½	.18	.18½
180 vis. at 70° F., 3 color:				
20 pour test	.21	.21½	.21	.21½
200 vis. at 70° F., 3 color:				
Zero pour test	.25½	.26	.25½	.26
10 pour test	.24½	.25	.24½	.25
15 pour test	.24	.24½	.24	.24½
25 pour test	.23	.23½	.23	.23½

Bright and Steam Refined Stocks

OKLAHOMA (Group 3)—	June 18		June 11	
Bright Stocks:				
190-200 D	.18		.17½	
150-160 D, 0-10	.15		.14½	
150-160 D, 10-25	.14½		.14	
150-160 25-40	.14		.13½	
150-160 E	.14		.13½	
Steam refined:				
630 green (treated)	.09½		.09½	
600 light green (untreated)	.08½		.08½	
600 dark green (untreated)	.05	.06	.05	.06
PENNSYLVANIA—				
Bright Stocks (Pennsylvania grade, No. 8 color, 145-50 at 510; 540-550 flash):				
10 pour test	.20	.20½	.20	.20½
15 pour test	.19	.19½	.19	.19½
20 pour test	.18	.18½	.18	.18½
25 pour test	.17	.17½	.17	.17½
Steam refined:				
600	.09½	.10	.09½	.10
650	.11	.11½	.11	.11½
600 Pennsylvania flash	.12	.12½	.12	.12½
630 flash	.17	.17½	.17	.17½
600 Warren E filtered	.13	.13½	.13	.13½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—	June 18		June 11	
124-126 (a.m.p.) w.c. scale	.02	.02⅛	.02	.02¼
PENNSYLVANIA (inland refineries)—				
122-124 (a.m.p.) w.c. scale	.0210	.0215	.0210	.0215
124-126 (a.m.p.) w.c. scale	.0215	.0220	.0215	.0220
NEW YORK—				
Wax in bags fully refined:				
123-125 (a.m.p.) wax	.0420		.0380	
125-127 (a.m.p.) wax	.0430		.0400	
128-130 (a.m.p.) wax	.0455		.0425	
130-132 (a.m.p.) wax	.0470		.0440	
133-135 (a.m.p.) wax	.0530		.0500	
135-137 (a.m.p.) wax	.0555		.0525	
124-126 (a.m.p.) w.c. scale	.0205	.0220	.0200	.0225
124-126 (a.m.p.) y.c. scale	.0205	.0215	.02	.0215
Petrolatum in barrels, carload lots:				
Dark green	.01⅞		.01⅞	
Amber	.02⅞	.03	.02⅞	.03
Extra amber	.03	.03⅛	.03	.03⅛
Lily white	.06⅝	.06¾	.06⅝	.06¾
Snow white	.07¾	.07⅞	.07¾	.07⅞
Cream	.05⅝	.05¾	.05⅝	.05¾
CHICAGO (f.o.b. switching district)*—				
122-124 (a.s.t.m.) wax	.0440	.0450	.0440	.0450
125-127 (a.s.t.m.) wax	.0465	.0475	.0465	.0475
127-129 (a.s.t.m.) wax	.0480	.0490	.0480	.0490
130-132 (a.s.t.m.) wax	.0540	.0550	.0450	.0550
132-134 (a.s.t.m.) wax	.0565	.0575	.0565	.0575

*Carload lots in burlap bags of approx. 225 lbs. Add 3° for a.m.p.

Export Prices

GASOLINE

GULF COAST—	June 18		June 11	
U. S. Motor	.05⅛	.05¼	.05⅛	.05¼
60-62 400	.05¼		.05¼	
61-63 390	.05¼	.05⅜	.05¼	.05⅜
64-66 375	.05⅜	.05½	.05⅜	.05½
LOS ANGELES:				
U. S. Motor grades:				
53-55 octane	.04		.04	
55-65 octane	.04	.04¼	.04	.04¼
65-67 octane	.04¼	.04½	.04¼	.04½
67-69 octane	.04½	.04¾	.04½	.04¾
Above 69 octane	.04¾	.05	.04¾	.05
58-60 400 endpoint	.04½	.05	.04½	.05
KEROSENE				
GULF COAST—				
41-43 prime white	.03⅞	.04	.03⅞	.04
41-43 water white	.04	.04¼	.04	.04¼
44 water white	.04¼		.04¼	
LOS ANGELES:				
41-43 water white	.04½	.05	.04½	.05
LUBRICANTS				
NEW YORK (f.a.s. in bbls.)—				
Cylinder Stocks:				
600 Warren E	.20		.20	
600 S.R. unfiltered	.16½	.17	.16½	.17
650 S.R. unfiltered	.18		.18	
600 flash S.R.	.19	.19½	.19	.19½
630 flash S.R.	.24	.24½	.24	.24½
Bright Stocks:				
8 color	.24		.23½	
6½ plus colors in dilution	.22½		.22½	
NEUTRAL OIL				
200-3 color	.28	.30	.28	.30
150-3 color	.23	.25	.23	.25
PARAFFIN WAX				
NEW YORK (prices per pound):				
123-125 a.m.p.	.03625		.03625	
125-127 a.m.p.	.0375		.0375	
128-130 a.m.p.	.0400		.0400	
130-132 a.m.p.	.0425	.0450	.0425	.0450
133-135 a.m.p.	.0475		.0475	
135-137 a.m.p.	.05		.05	
Crude scale:				
124-126 w.s.	.0205	.0215	.0205	.0215
124-126 y.s.	.0205	.0210	.0205	.0210

Crude Oil Gravity Table

Gravity—	Oklahoma and Kansas	North Texas, Central Texas and East Central Texas	North Louisiana and Arkansas	Gray County, Texas	Carson, Hutchinson and Moore Counties, Texas	Conroe, Texas	Salt Creek, Wyo.	Gulf Coast, Texas and Louisiana*	Gulf Coast Texas and Louisiana*	Cotton Valley, Louisiana
	1	2	3	4	5	6	7	8	9	10
Below 20	....	....	....	....	....	....	....	$.82	$.82	....
20-20.9	....	....	....	....	....	....	....	.84	.84	....
21-21.9	....	....	....	....	....	....	....	.86	.86	....
22-22.9	....	....	....	....	....	....	....	.88	.88	....
23-23.9	....	....	....	....	....	....	....	.90	.90	....
24-24.9	....	....	....	....	....	....	....	.92	.92	....
Below 25	*$.76	....	....	....	....	....	....	....	....	$.70
25-25.9	*.78	....	....	....	....	....	....	.94	.94	.72
26-26.9	*.80	....	....	....	....	....	....	.96	.96	.74
27-27.9	*.82	....	....	....	....	....	....	.98	.98	.76
28-28.9	*.84	....	....	....	....	....	....	1.00	1.00	.78
Below 29	.84	$.79	$.79	....	....	....	$.84	....	....	....
29-29.9	.86	.81	.81	....	....	....	.86	1.02	1.02	.80
30-30.9	.88	.83	.83	....	....	....	.88	1.04	1.04	.82
31-31.9	.90	.85	.85	....	....	....	.90	1.06	1.05	.84
32-32.9	.92	.87	.87	....	....	....	.92	1.08	1.06	.86
33-33.9	.94	.89	.89	....	....	....	.94	1.10	1.07	.88
34-34.9	.96	.91	.91	....	....	....	.96	1.12	1.08	.90
Below 35	....	....	....	$.79	$.69	....	....	....	....	....
35-35.9	.98	.93	.93	.81	.71	$1.09	.98	1.12	1.09	.92
36-36.9	1.00	.95	.95	.83	.73	1.11	1.00	1.12	1.10	.94
37-37.9	1.02	.97	.97	.85	.75	1.13	1.02	1.12	1.11	.96
38-38.9	1.04	.99	.99	.87	.77	1.15	1.04	1.12	1.12	.98
39-39.9	1.06	1.01	1.01	.89	.79	1.17	1.06	1.12	1.13	1.00
40 and over	1.08	1.03	1.03	.91	.81	1.19	1.08	1.12	1.14	1.02

Effective December 3, 1934, Panhandle Refining Co., purchasing oil in North Texas, posted below 29 degrees, 68 cents; 29-29.9 degrees, 70 cents, with 2 cents added for each additional degree up to 40 and over, 92 cents.

*The following companies purchasing crude oil in Kansas or Oklahoma, or both, begin their price schedule: Below 25°, 76 cents; 25-25.9°, 78 cents, with 2 cents added for each degree upward to 40 and over at $1.08; Carter Oil Co., Magnolia Petroleum Co., Pure Oil Co., Rock Island Refining Co., Shell Petroleum Corp., Sinclair Prairie Oil Marketing Co., Skelly Oil Co., and Wilcox Oil & Gas Co. All others begin their schedules at below 29°, 84 cents, excepting Phiitex Oil Co., which begins with below 31° at 88 cents.

Column 1—Effective September 29, 1933, Texas Co. of Oklahoma; Stanolind Crude Oil Purchasing Co. in Kansas and Oklahoma; Anderson & Prichard, Inc., in Oklahoma; Bell Oil & Gas Co. in Oklahoma; Carter Oil Co. in Oklahoma and Kansas; Deep Rock Oil Co. in Oklahoma; Derby Oil Co. in Kansas; Globe Refining Co. in Oklahoma; Golden Rule Refining Co. in Kansas; Gypsy Oil Co. in Oklahoma and Kansas; Kanotex Refining Co. in Kansas; Magnolia Petroleum Co. in Oklahoma; Mid-Continent Petroleum Corp. in Oklahoma; National Refining Co. in Kansas and Oklahoma; Shell Petroleum Corp. in Kansas and Oklahoma; Sinclair Prairie Oil Marketing Co in Kansas and Oklahoma; Texas Co. in Oklahoma; Tide Water Oil Co. in Oklahoma; Vickers Refining Co. in Kansas; Continental Oil Co. in Kansas and Oklahoma; Empire Pipe Line Co. in Oklahoma and Kansas; Phiitex Oil Co. in Kansas and Oklahoma; Pure Oil Co. in Oklahoma; Skelly Oil Co. in Kansas. Effective September 29, by White Eagle Oil Corp. in Kansas; October 1, by Barnsdall Refineries, Inc., in Oklahoma.

Column 2—Effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Bell Oil & Gas Co., Continental Oil Co. Effective January 14, 1935, in the Van Pool, Van Zandt County, Pure Oil Co. posted below 29°, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03.

Column 3—Effective September 29, 1933, by Texas Co., Magnolia Petroleum Co., Gulf Refining Co. Effective December 22, Stanolind Oil & Gas Co. in Pine Island, Louisiana, and Marion County, Texas, posted below 29°, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03. Effective March 17, 1934, by Standard Oil Co. of Louisiana and Louisiana Oil Refining Co. Starting with below 35°, 71 cents, adding 2 cents for each degree upward to 40 and over at $1.03

Column 4—Effective September 30, 1933, by Texas Co., Humble Oil & Refining Co., Magnolia Petroleum Co., Sinclair Prairie Oil Marketing Co., and H. F. Wilcox Oil & Gas Co. On same day, Phiitex Oil Co. posted below 31°, 71 cents, with 2 cents added for each degree up to 40 and over at 91 cents. Effective June 1, 1934, Texas Co. (see note above).

Column 5—Effective September 29, 1933, by Texas Co., Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Wilcox Oil & Gas Co., Continental Oil Co. On same day, Phiitex Oil Co. posted below 31°, 61 cents, with 2 cents added for each degree upward to 40 and over at 81 cents. Effective June 1, 1934, Texas Co. (see note above).

Column 6—Effective September 29, 1933, by Humble Oil & Refining Co. and Tide Water Oil Co., and on September 30 by Texas Co., which on September 29 had posted a schedule of $1.07 to $1.12 with a 1-cent spread on each degree.

Column 7—Effective September 29, 1933, by Stanolind Oil & Gas Co.

Column 8—Effective September 29, 1933, by Humble Oil & Refining Co., Gulf Pipe Line Co., Shell Petroleum Corp., Pure Oil Co., Sinclair Prairie Oil Marketing Co. On October 2, Magnolia Petroleum Co. posted Lockport, Louisiana, 20-20.9°, 84 cents, with 2 cents added for each degree upward to 34 and over at $1.12; and in Cameron Meadows and Iowa, Louisiana, below 20°, 72 cents, with 2 cents added for each degree up to 34 and over at $1.02. These prices were 2 cents higher on each degree than Magnolia prices posted on September 29. Effective September 29, Shell Petroleum Corp. posted in Iowa, Louisiana, district: Below 20°, 70 cents, with 2 cents added for each degree upward to 34° and over at $1; and in Black Bayou and White Castle, Louisiana: Below 20°, 80 cents, with 2 cents added for each degree upward to 34° and over at $1.10.

Column 9—Effective September 30, 1933, Texas Co. (On September 29 Texas Co. has posted a schedule of 2 cents on each degree, but changed it on September 30.)

Column 10—Effective September 29, 1933, by Louisiana Oil Refining Co.

(California Crude Oil Prices on Page 33)

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas $1.00
Corsicana (heavy) (June 17, 1933)* ..... .80
Other fields ..... (See gravity table)

Note—In East Texas, effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Shell Petroleum Corp., Gulf Pipe Line Co., Tide Water Oil Co., Sinclair Prairie Oil Marketing Co., Magnolia Petroleum Co., Sun Oil Co., Panola Pipe Line Co., Empire Oil & Refining Co., and Atlas Pipe Line Co. posted 60 cents per barrel in East Texas but on November 3 resumed its posted price of $1 per barrel, making it retroactive to October 22.

*Magnolia Petroleum Co.

West Texas

Crane, Upton, Crockett, Howard, Glasscock, Mitchell (Sept. 29, 1933) ..... $ .70
Ector, Winkler and Pecos Counties and Lea County, New Mexico (Sept. 29, 1933) ..... .75
Pecos County, Yates shallow Pool (Sept. 29, 1933)* ..... .55
Jones and Fisher Counties* ..... See gravity table

Note — Effective September 29, 1933, by Humble Oil & Refining Co., Texas Co., Gulf Pipe Line Co., Shell Petroleum Corp., Magnolia Petroleum Co., and by Stanolind Oil & Gas Co. in Winkler County, Texas.

*Shell Petroleum Corp.

Gulf Coast

Grade A and Grade B specification discontinued by leading buyers.
..... (See gravity table)
Tomball (see note)* $1.10
Livingston (Sept. 29, 1933)† 1.00
Cleveland (Jan. 11, 1934) 1.00
Greta (Sept. 29, 1933) ..... .85
Refugio, light ..... (See gravity table)
Refugio, heavy (Sept 29, 1933)‡ ..... .81
Markham and High Island ..... (See Gulf Coast gravity table)
Conroe ..... (See Conroe gravity table)
Bosco, La. (Jan. 18, 1935)§ ..... $ .90

Note—Tomball, effective September 29, by Humble Oil & Refining Co. and October 2 by Magnolia Petroleum Co., and November 10 by Stanolind Crude Oil Purchasing Co.

*Greta posted by Texas Co. †Shell Petroleum Corp. ‡Refugio heavy by Humble Oil & Refining Co. Cleveland (Liberty County) posted by Magnolia Petroleum Co. §Bosco posted by Pure Oil Co.

South Central and Southwest Texas

(See note below table)

Darst Creek ..... $ .87
Mirando ..... .80
Luling (Sept. 29, 1933) ..... .75
Pettus 1.05
Salt Flat ..... .87
Lytton Springs (Sept. 29, 1933) ..... .95
Duval County (Sept. 29, 1933) ..... .80
Saxet ..... .85

Note—Effective on September 29 by Humble Oil & Refining Co. in Darst Creek, Mirando, Pettus, Salt Flat and Saxet. Effective September 29 in Darst Creek by Gulf Pipe Line Co. and Texas Co. Effective October 2 by Magnolia Petroleum Co. Effective in Pettus and Salt Flat on September 29 by Humble Oil & Refining Co. and Gulf Pipe Line Co. Luling and Lytton Springs by Magnolia Petroleum Co. Duval County by Texas Co. Saxet, effective September 29 by

(Continued on Page 33)

TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

June 18, 1935

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third grade and a premium grade are also available.

Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank wagon or 3 cents a gallon off retail prices is permitted for purchases running between 4,000 and 10,000 gallons a month, or 4 cents a gallon off retail prices for purchase in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Chicago	15.5	17.5	4.0	9.8
Decatur, Ill.	15.5	17.5	4.0	9.8
E. St. Louis	15.2	17.2	4.0	9.5
Joliet	15.5	17.5	4.0	9.8
Peoria	15.5	17.5	4.0	9.8
Quincy	15.3	17.3	4.0	9.6
Davenport, Ia.	15.5	17.5	4.0	9.8
Des Moines	15.3	17.3	4.0	9.6
Mason City	15.7	17.7	4.0	10.0
Sioux City	15.5	17.5	4.0	9.8
Duluth, Minn.	16.3	18.3	4.0	10.6
Mankato	15.9	17.9	4.0	10.2
Minneapolis	15.9	17.9	4.0	10.2
LaCrosse, Wis.	16.9	18.9	5.0	10.2
Green Bay	17.2	19.2	5.0	10.5
Milwaukee	16.8	18.8	5.0	10.1
Madison	16.9	18.9	5.0	10.2
Detroit, Mich.	16.7	18.7	4.0	9.2
Grand Rapids	16.6	18.6	4.0	10.5
Saginaw	16.8	18.8	4.0	9.3
Evansville, Ind.	17.2	19.2	5.0	10.2
Indianapolis	17.4	19.4	5.0	10.5
South Bend	17.6	19.6	5.0	12.0
Fargo, N. Dak.	16.9	18.9	4.0	11.2
Huron, S. Dak.	17.4	19.4	5.0	10.7
Sioux Falls	16.9	18.9	5.0	10.2
Kans. Ct., Mo.*	14.9	16.9	4.0	9.2
Springfield	14.6	16.6	4.0	8.9
St. Louis	15.2	17.2	3.5	9.5
St. Joseph*	14.9	16.9	4.0	9.2
Wichita, Kans.	14.4	14.2	4.0	8.3
Bartlesville, Ok.	16.3	18.3	5.0	8.8

*State tax 2 cents, 1-cent city tax and 1-cent federal tax.

Discounts to dealers: Undivided accounts, 1½ cents on premium and regular and 2½ cents on third grade off service station prices; divided accounts one-half cent less than undivided. Where prices are more than 1 cent below normal, the discounts are one-half cent less than above.

Stanolax Furnace Oil in Chicago

Effective May 28, 1935, f.o.b. Chicago tank wagon prices: Range oil, less than 100 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and more, 7.3 cents. No. 1 (36-40 lt. stw. zero), less than 100 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons or more, 7.3 cents; No. 2 (30-34, stw. zero), same prices and quantities as No. 1; No. 3 (22-26, zero), less than 150 gallons, 7.5 cents; 150 gallons or more, 6.5 cents. No. 4 (12-16 zero), less than 400 gallons, 7.5 cents; 400 gallons or more, 6.5 cents; viscosity of No. 4, 85 and 100° F.; No. 5, less than 400 gallons, 5½ cents; 400 gallons or more 4½ cents.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Atlanta, Ga.	19.0	21.0	7.0	12.0
Augusta	19.0	20.0	7.0	12.0
Macon	19.5	21.0	7.0	13.0
Savannah	18.5	20.5	7.0	14.0
Birm'ham, Ala.	21.0	23.0	8.0	12.0
Mobile	20.0	22.0	8.0	13.0
Montgomery	22.0	24.0	8.0	12.5
Jackson, Miss.	19.0	21.0	7.0	11.0
Vicksburg	18.5	20.0	7.0	12.0
Jack'ville, Fla.	18.5	20.5	8.0	11.5
Miami	18.5	20.5	8.0	13.5
Pensacola	20.0	22.0	8.0	11.5
Tampa	18.5	20.5	8.0	12.5
Lexington, Ky.	19.5	21.5	6.0	10.0
Covington	18.0	20.0	6.0	11.5
Louisville	18.5	20.5	6.0	10.0
Paducah	18.5	20.5	6.0	10.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia and Mississippi include 1 cent state tax; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline; in Florida an inspection fee of one-eighth cent on kerosene and gasoline. To Pensacola, Mobile and Birmingham state taxes on gasoline add 1 cent city tax.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Denver, Colo.	18.0	20.0	5.0	13.0
Pueblo	17.0	19.0	5.0	12.0
Grand Junction	20.5	22.5	5.0	15.0
Casper, Wyo.	18.5	20.5	5.0	11.5
Cheyenne	18.5	20.5	5.0	13.0
Butte, Mont.	21.0	23.0	5.0	17.5
Billings	20.5	22.5	6.0	16.5
Helena	21.5	23.5	6.0	17.5
Great Falls	20.5	22.5	6.0	17.5
Salt Lake, Utah	21.0	23.0	5.0	16.0
Boise, Idaho	22.5	24.5	6.0	18.0
Twin Falls	23.0	25.0	6.0	18.0
Albu'que, N. M.	20.0	22.0	*6.5	13.0

*One-half cent city tax.

Effective March 1, 1934, discount to dealers with or without contract throughout Continental territory: Undivided dealer discount off service station price, 4 cents; divided dealer accounts, 3½ cents.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Dallas, Tex.	15.0	17.0	5.0	8.0
Fort Worth	15.0	17.0	5.0	8.0
Houston	15.0	17.0	5.0	8.0
San Antonio	15.0	17.0	5.0	8.0
El Paso	17.0	19.0	5.0	10.0
Muskogee, Ok.	16.0	18.0	5.0	8.0
Okla. City	16.0	18.0	5.0	8.0
Tulsa	16.0	18.0	5.0	8.0
Ft. Smith, Ark.	14.5	18.0	5.0	8.5
Little Rock	17.0	20.5	7.5	9.5
Texarkana	15.5	17.5	5.0	8.0

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Atl'tic City, N.J.	14.0	17.5	4.0	9.0
Newark	13.3	16.8	4.0	7.5
Annapolis, Md.	14.8	18.3	5.0	10.0
Baltimore	14.3	17.8	5.0	8.5
Cumberland	15.8	19.3	5.0	12.7
Wash'g'n, D. C.	12.3	15.8	3.0	9.5
Danville, Va.	16.4	20.1	6.0	12.9
Norfolk	15.1	18.6	6.0	11.3
Petersburg	15.8	19.3	6.0	11.4
Richmond	15.8	19.3	6.0	11.7
Roanoke	16.8	20.3	6.0	12.9
Charles'n, W.Va.	15.0	18.5	5.0	12.4
Parkersburg	14.3	17.8	5.0	11.2
Wheeling	15.5	19.0	5.0	13.2
Charlotte, N. C.	17.5	20.5	7.0	13.5
Hickory	18.7	22.2	7.0	13.7
Mt. Airy	18.25	21.5	7.0	13.8
Raleigh	18.2	21.7	7.0	13.3
Salisbury	17.5	20.0	7.0	13.6
Charleston, S.C.	16.3	19.7	7.0	11.3
Columbia	18.0	21.5	7.0	13.2
Spartanburg	18.4	21.9	7.0	13.5

Effective October 23, tank wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at regular price less one-half cent. Discount for kerosene, 1 cent off tank wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except in New Jersey, where no discount is given.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Omaha	17.9	19.9	6.0	10.1
McCook	18.6	20.6	6.0	10.8
Norfolk	18.2	20.2	6.0	10.5
North Platte	18.7	20.7	6.0	10.9
Scottsbluff	19.4	21.4	6.0	11.6

Note: Discounts to dealers; where service station gasoline prices are (maximum overall, including rent) as follows: Reliance, 2¼ cents; Standard Red Crown, 3½ cents; Red Crown Ethyl, 2½ cents.

Where service station gasoline prices are below normal, resellers' allowances are reduced one-half of the amount below normal, down to the following (minimum overall, including rent): Reliance, 2 cents; Standard Red Crown, 3 cents; Red Crown Ethyl, 2 cents. Discounts to consumers for tank wagon deliveries covered only by Standard Commercial Consumers Contract, effective January 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
N. Orleans, La.	15.5	17.5	‡8.0	†13.5
Baton Rouge	16.5	20.0	‡7.0	12.5
Alexandria	17.5	21.0	†*8.0	10.5
Lafayette	18.0	21.5	‡*8.0	12.5
Lake Charles	18.0	21.5	†*8.0	12.5
Shreveport	16.0	19.5	‡7.0	12.5
Knoxville, Tenn.	20.0	23.5	8.0	14.0
Memphis	18.0	21.5	8.0	11.0
Chattanooga	19.5	23.0	8.0	11.5
Nashville	19.0	22.5	8.0	13.5
Bristol	17.85	20.6	8.0	14.5

*Includes city tax of 1 cent.

‡Includes 2-cent parish tax. †Includes 1-cent parish tax.

Effective October 23, tank wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at dealer price less one-half cent.

Louisiana kerosene prices include 1-cent state tax.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA.

	Gasoline			Kero.
	Tank wagon†	Posted retail	Incl'ds tax	tank wagon
San Francisco	16.5	18.5	4.0	11.5
Los Angeles	12.5	14.5	4.0	10.5
Fresno, Calif.	16.0	18.0	4.0	12.0
Phoenix, Ariz.	20.0	22.0	6.0	‡18.0
Reno, Nev.	18.0	20.0	5.0	13.0
Portland, Ore.	19.0	21.0	6.0	13.5
Seattle, Wash.	19.0	21.0	6.0	13.5
Tacoma	19.0	21.0	6.0	13.5
Spokane	22.0	24.0	6.0	16.5

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Prices are at company's plant or depots, as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

‡Includes 5-cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Phil'delphia, Pa.	15.0	17.0	4.0	9.0
Pittsburgh	16.0	18.0	4.0	10.0
Allentown	15.5	17.5	4.0	10.0
Erie	15.0	17.0	4.0	9.0
Scranton	16.0	18.0	4.0	10.0
Altoona	16.0	18.0	4.0	10.0
Dover, Del.	15.5	17.5	4.0	10.0
Wilmington	15.5	16.5	4.0	9.8
Springf'd, Mass.	13.2	16.7	4.0	7.5
Worcester	13.3	16.8	4.0	7.5
Hartford, Conn.	12.3	15.8	3.0	7.5
New Haven	12.2	15.7	3.0	7.5
Providence, R.I.	12.0	15.5	3.0	7.0

Note—Tank wagon prices are those applicable to consumers purchasing lots of 100 or more gallons in one delivery.

Canada*

Imperial 3-Star Gasoline

IMPERIAL OIL, LTD.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Hamilton, Ont.	22.0	25.0	6.0	17.5
Toronto, Ont.	22.0	25.0	6.0	17.5
Brandon, Man.	30.3	33.3	7.0	21.8
Winnipeg, Man.	28.7	31.7	7.0	20.2
Regina, Sask.	30.0	33.0	7.0	21.5
Saskatoon, Sask.	32.8	35.8	7.0	24.3
Edmonton, Alta.	33.2	36.2	7.0	23.7
Calgary, Alta.	29.5	32.5	7.0	21.0
Vancouver, B.C.	27.0	30.0	7.0	24.0
Montreal, Que.	24.0	27.0	6.0	17.0
St. John, N.B.	26.0	30.0	8.0	19.5
Halifax, N. S.	26.0	30.0	8.0	19.5

*Imperial gallon used in Canada.

Maritime provinces, all dealers 4 cents off service station price. All other provinces open dealers 3 cents per gallon off service station price, 1 cent additional to 100 per cent accounts.

Naphtha

STANDARD OIL CO (INDIANA)

	Tank wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	16.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago, March 12, 1935. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

New York and New England

SOCONY-VACUUM CO., INC

	Gasoline			Kero.
	Posted dealer	Service station	Incl'ds tax	tank wagon
Albany, N. Y.	14.2	17.7	5.0	7.5
*Met. New York	14.55	18.3	5.0	7.25
*Br'kl'n, Queens	14.3	17.8	5.0	7.25
Buffalo	14.7	18.2	5.0	8.0
Rochester	15.0	18.5	5.0	8.5
Syracuse	14.5	18.0	5.0	8.5
Boston, Mass.	11.0	12.5	4.0	7.0
Portland, Me.	14.5	18.0	5.0	7.5
Manch't'r, N.H.	14.8	18.3	5.0	8.25
Burlington, Vt.	16.2	19.7	5.0	8.4

*Includes 2 per cent city sales tax.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Ohio points	17.0	19.0	5.0	*12.5

*Includes state tax of 1 cent, effective July 22.

Retail Price Changes

Regular-Grade Gasoline and Kerosene

Continental Oil Co. June 10 advanced tank wagon and station gasoline one-half cent in Twin Falls.

Standard Oil Co. (Indiana) June 14 advanced tank wagon and station gasoline .3 cent throughout its territory except in Michigan.

Standard Oil Co. of Louisiana June 8 reduced tank wagon gasoline .75 cent and station gasoline 1.5 cents in New Orleans; June 10, further reduced these prices 1.25 and 2 cents respectively.

Socony-Vacuum Oil Co., Inc., June 11 reduced posted dealer gasoline one-half cent and station gasoline 1 cent in Boston.

Standard Oil Co. (Nebraska) June 14 advanced tank wagon and station gasoline throughout Nebraska .3 cent.

Standard Oil Co. of New Jersey June 6 advanced tank wagon gasoline 1.35 cents and station gasoline 2.6 cents in Spartanburg. June 11, reduced tank wagon gasoline .9 cent and station gasoline 1.4 cents in Charlotte. May 31, advanced tank waon gasoline 1.2 cents and station gasoline 1.7 cents in Salisbury. Salisbury station price advance previously reported incorrectly as 2.7 cents.)

Standard Oil Co. of Ohio May 29 advanced tank wagon and station gasoline one-quarter cent throughout its territory.

Magnolia Petroleum Co. June 7 advanced tank wagon kerosene 1 cent and June 10 advanced station gasoline one-half cent in Little Rock.

Good Roads, End of Doubt Needed by Group 3 Market

(Continued from Page 24)

stronger this year. So long as stabilized natural is available at a price slightly under that for the refined material it seems assured of a ready market.

There was no large buying of natural gasoline in the last week, but there was enough to take care of all offered in the open market. It is pointed out that manufacturers are storing substantial quantities at the plants. This procedure, an unusual one, is said to have been adopted on the likelihood of higher prices as soon as the shut-in in the Panhandle becomes effective August 1.

The lubricating oils were taking on a better tone and bright stocks were a half-cent higher. In the lubricant as in the gasoline market, it was felt that a little decent weather would help sales greatly. Kerosene was easier, with lower quotations looked for. Furnace oils were off an eighth. Wax was slow and having trouble in maintaining quotations which have ruled for weeks.

NEWS FOR SALES DEPARTMENTS

Blends of Alcohol Meet Varied Success as Fuel

The use of alcohol as a motor fuel has increased considerably in recent years particularly in European countries which have little or no petroleum resources, according to C. C. Concannon, chief of the Commerce Department's Chemical Division. Several factors have been responsible for this trend, he explained, most important of which have been the scarcity of exchange in some countries which has made it difficult for them to obtain imports in sufficient quantities, the growth of economic nationalism, and the desire of governments to improve agricultural conditions by using surplus farm products for the production of alcohol.

While all these factors have figured prominently in the introduction of alcohol as a motor fuel, in many countries it appears that the desire to relieve agriculturists has been the single motive. Invariably the movement has been supported by legislative action and in many countries state alcohol monopolies, or similar organizations have been made responsible for enforcement. Generally such legislation requires alcohol in percentages ranging up to 40 per cent to be mixed with gasoline, and invariably the alcohol so used must be of domestic production. Mr. Concannon stated that most decrees which he has examined specify which type of motors or by whom such mixtures are to be used and lists exemptions such as racing cars, airplanes, etc.

The success of alcohol as a motor fuel has varied, it is pointed out. Some countries, notably Germany, appear to have experienced considerable success. Others after experiments have abandoned the idea, or modified requirements. Other countries have pronounced the scheme impractical after conducting investigations; and still others are at present framing laws designed to increase the use of alcohol blends as motor fuel.

SOCONY-VACUUM STORAGE

MUSKEGON, Mich., June 17.—Testing of the Socony-Vacuum Oil Co.'s 80,000-bbl. storage tank at the new White Star division's western Michigan distribution center here was completed yesterday with the first cargo of gasoline for this tank due to arrive next week.

Moving of the bulk plant for Muskegon and vicinity from the former Cardinal-Dixie location to the storage tank farm south of the Muskegon city limits has been started as the last step in construction of the new $175,000 plant here. All construction work is expected to be completed in a week or 10 days.

Four boat loads of about 650,000 gallons each already have arrived here for storage in the smaller 60,000-bbl. and 7,700-bbl. tanks comprising facilities for about 5,500,000 gallons with the big tank.

NAVY DIESEL CONTRACTS

The Navy Department has awarded contracts for six months' supply of fuel oil for Diesel engines for the requirements of the Naval service on the West Coast at an approximate cost of $2,595,042.78.

The contracts for this oil were awarded as follows: Associated Oil Co., $450,200; General Petroleum Corp., $658,500; Receivers for Richfield Oil Co., $57,500; Standard Oil Co. of California, $206,238.82; Sunset Oil Co., $162,375; Texas Co. (California), $888,050, and Union Oil Co., $172,178.96.

Marketers of Oil Unanimously Adopt Resolution Condemning Thomas Bill

WASHINGTON, D. C., June 17.—A definite program for the future of the independent oil jobber was laid down today at a meeting of the National Oil Marketers Association. Representatives of jobbers in all sections of the country were present.

The meeting was opened by Paul E. Hadlick, general counsel of the association, who acted as chairman. Mr. Hadlick explained some of the problems confronting the jobbers, and outlined a general plan for the future which he had found was wanted by that branch of the industry.

The first order of business was the adoption by the group of a resolution condemning the Thomas oil control bill, and any other federal legislation which did not offer adequate protection to the oil jobbers and marketers. This resolution was adopted unanimously by the meeting.

The prospect of a voluntary code for marketing, similar to the Federal Trade Commission code, was discussed, and a resolution was passed authorizing Mr. Hadlick and E. V. Weber, president of the association, to sit with the members of the industry who are drafting the proposed code. An advisory committee of five jobbers was also appointed to confer with Hadlick and Weber in putting across their ideas. It was unanimously voted by the group that there should be no relaxation of the antitrust laws, they being of the opinion that such action by the Federal Government did not give the marketing group represented by the jobbers any advantage, but on the contrary were extremely harmful to their interests. A resolution was also passed recommending to the United States attorney general that an investigation be made by the Department of Justice into whether a conspiracy existed among producers and refiners to limit the margins allowed jobbers.

During the afternoon session the association was asked to assist the Petroleum Administrative Board in compiling statistical and other data, Dr. John Frey, member of the board, making the request. It was explained by Doctor Frey that under the new law the only reason for the existence of the PAB was the gathering of data, the data to consist of statistics covering all phases of the oil industry including the mortality rate of jobbers, reasons for quitting business, margins, reasons for changes in margins, etc.

When members of the group criticized the administration of the oil code, Doctor Frey heatedly defended the administration thereof, stating that the board did not write the oil code, but it was handed to it as it was written by the industry.

JOHN E. SKEHAN » » »

THERE are few details in the marketing end of the oil business with which John E. Skehan, manager of wholesale sales of the Standard Oil Company of New Jersey is not familiar for the reason that in his more than 30 years with the company he has either held the jobs connected with these details or directed the work of others.

He started to work with the Standard's marketing department in 1902 as a junior clerk in the lubricating oil division. He successively was a collector for the accounting department and a specialty salesman. In 1911 he was appointed a salesman for the motor oil trade which was rapidly increasing in importance at that time. By 1919 he held a sales promotion job covering an entire division.

In 1920, Mr. Skehan was made a district sales manager with headquarters at Newark, N. J., and in 1926 he was made manager of the Newark branch office. He continued in that position until June, 1931, when he was elected a vice president of the Standard Oil Company of Louisiana and placed in general charge of sales.

In 1933, in a general reorganization of the domestic sales operations of the Standard Oil Company of New Jersey and affiliated marketing companies he returned to the New York offices and was placed in charge of all wholesale sales. The principal marketing companies are the Standard of New Jersey, Standard of Pennsylvania, Colonial Beacon Oil Company, and Standard of Louisiana, operating in a large number of states.

Demand and Production of Road Asphalt Revived

Revived activity in highway construction, stimulated by allotments of federal funds, and a somewhat greater demand for roofing raised production both of petroleum asphalt and native asphalt and bitumen from 1933 to 1934. Refinery production of asphalt increased 16 per cent from 2,456,051 short tons in 1933 to 2,840,496 tons in 1934, according to figures compiled by the Bureau of Mines, Department of the Interior. Domestic demand increased 12 per cent, from 2,296,046 tons in 1933 to 2,569,395 tons in 1934. Exports of petroleum asphalt, especially to northern and western Europe and to the Far East, increased from 204,032 short tons in 1933 to 223,906 tons in 1934. Imports of asphalt and bitumen, however, decreased from 21,706 short tons in 1933 to 15,679 tons in 1934. As a result of the greater increase in production than in demand, stocks of petroleum asphalt held at refineries were 23 per cent larger at the end of 1934 than at the end of 1933.

Of the 2,840,496 short tons of asphalt manufactured in the United States at petroleum refineries in 1934, 1,395,650 tons were made from foreign crude petroleum imported chiefly from Venezuela, Mexico and Colombia, and 1,444,846 tons from crude petroleum produced in the United States. The 1934 total output included 133,704 short tons of other petroleum products blended with the asphalt to produce commercial varieties of the required hardness and consistency.

Refinery sales of petroleum asphalt increased 12.5 per cent in quantity, from 2,424,800 short tons in 1933 to 2,727,241 tons in 1934; and 27 per cent in value, from $23,542,544 in 1933 to $29,895,439 in 1934. The greatest proportional increase was in sales of cut-back asphalts, used in surfacing rural and secondary highways, from 508,553 tons in 1933 to 624,183 tons in 1934. Similarly, sales of emulsified asphalts, both by petroleum refineries and by industrial companies manufacturing emulsions from asphalt purchased from petroleum refineries, increased from 31,995,000[1] gallons (135,600 short tons), valued at $1,194,000[1], in 1933 to 39,664,000 gallons (168,000 short tons) valued at $3,617,000 in 1934. Refinery sales of paving asphalt increased from 798,607 tons in 1933 to 924,135 tons in 1934, as a result of increased road building especially in the Middle Atlantic states, the southern states, and the Middle West.

Although the apparent demand and production in the roofing industry, as measured by sales of prepared roofing and factory shipments of dry roofing felt, decreased slightly from 1933 to 1934, sales of roofing asphalt and flux combined increased from 702,090 short tons in 1933 to 751,790 tons in 1934.

Imports of asphalt and bitumen, unmanufactured, decreased from 21,706 short tons, valued at $278,401, in 1933 to 15,679 tons, valued at $222,372, in 1934. Lake asphalt imported from Trinidad decreased from 12,047 tons in 1933 to 9,606 tons in 1934. Glance pitch, or grahamite, imported from Cuba amounted to 8,286 tons in 1933 and 5,861 tons in 1934.

Exports of petroleum asphalt from the United States were 10 per cent larger in quantity and 18 per cent greater in value in 1934 than in 1933. From 204,032 tons, valued at $2,860,964, in 1933 they increased to 223,906 tons, valued at $3,383,-

(Continued on Page 35)

[1]Revised figures.

NATURAL GASOLINE MANUFACTURE

Panhandle Gas Meeting Prepares for Shutdown

AMARILLO, Tex., June 15.—Completing the two-day Panhandle gas hearing today natural gasoline plant operators expect natural production to be cut about 50 per cent of the present yield after August 1, at which time the new Panhandle gas law becomes effective. With this likely, the several points of dispute with respect to what the Texas Railroad Commission may rule as a basis for drainage per well, gas allocations for oil wells and the singling out of Wheeler County as a point for special control remained unsettled as the meeting closed Saturday.

The move to establish Wheeler County as a separate area for control was supported by the Lone Star Gas Co. through two witnesses, all that could be heard during the day's session. They were the company production engineer, J. H. Dunn of Dallas, and Dr. E. A. Stephenson, professor of geology of the Missouri School of Mines at Rolla, Mo.

Col. Ernest Thompson, chairman of the Railroad Commission, presided with Commissioner C. V. Terrell and Attorney General William McCraw and four assistants sitting in on the proceedings.

As the hearing was opened Colonel Thompson asked for gas nominations from purchasers in this field and all responded at that time with the exception of the Cities Service Co. The amount of the nominations has not as yet been totaled.

Mr. Dunn based his contention for a separate zone of Wheeler County on several factors. He stated the plan would be more equitable for the producers and the royalty owners for many reasons in addition to the physical differences he had already stated. He cited the drilling tracts there were much smaller than the western area owing to the intense development of gas and the very recent period in which oil had been found there in large quantities, that the two fields had an entirely different marketing setup, and that the pipe lines serving the western field do not enter Wheeler County.

The witness had also worked out a formula for proration of production which he submitted to the commission.

He would make the drainage units of 320 acres and take as a production basis open flow of a well to count 25 per cent and acreage to count 75 per cent. Both setups were agreed to by the only other witness, Doctor Stephenson.

The major gas pipe line companies will contend for a large unit for drainage purposes and the acreage basis as the main factor in determining the allocation per well. The independent producers with smaller holdings will contend for just the opposite, smaller drainage units and the open flow of the well to be the main factor in the determination of the well's portion of the market.

Witnesses offered by the major companies on the Wheeler County situation were all qualified gas engineers who testified for the separate zone and the 320-acre unit factor.

At the close of the hearing several exhibits were offered by Maurice Cheek, representing Hagy, Harrington & Marsh. One was an affidavit of E. N. Stanley which contained the opinion that 160 acres was the most desirable and efficient drainage unit. This was immediately objected to by Charles Keffer, attorney for the Red River Gas Co.

Volatility Classification of Motor Fuels Is Suggested by Auto Engineers

Emphasizing the importance of motor fuel volatility and antiknock value in designing an automobile engine, T. A. Boyd of General Motors Corp. in a paper jointly written with John M. Campbell and Wheeler G. Lovell, of the same company, summarized the trends in automotive design before the thirtieth annual meeting of the S.A.E. in White Sulphur Springs, W. Va., Thursday. Portions of their papers are presented here. Mr. Boyd stated:

"Concerning the problem of engine design as related to fuel volatility, there are perhaps three factors that merit careful consideration. First, the engine must be designed to take the best advantage of

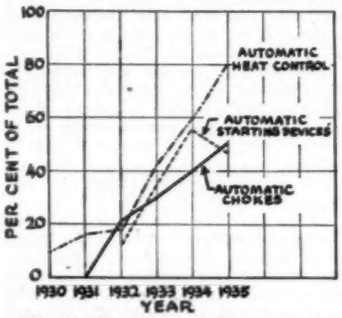


Fig. 1—Trend toward automatic starting and warm-up devices on automobiles, the operation of which is effected by the relative volatility of the gasoline

the present available fuels as far as practicable. Second, this design cannot be entirely made to suit an average gasoline, because there is no average gasoline, except as a statistical concept. The engineer builder cannot tell the customer to buy any particular brand. Obviously, in this situation the engine manufacturer cannot take full advantage of the potential value of the better ones of the fuels because he must also utilize some of those which would be considered as the worst from his standpoint. The third consideration centers around the fact that, once an engine has been built, it must operate and give satisfactory service over a considerable period of years. It is obvious that because all of these considerations must be grouped together in formulating actual automobile design, that a very considerable amount of compromise and guess is going to be involved. The guess is involved because no one knows what changes the future will bring. However, it may perhaps be a saving feature of this situation that some of the advantages of more volatile gasolines are simply potential ones which cannot actually be realized unless special provision is made for them in the automobile design.

"There are two outstanding trends in automobile design which have taken place over a period of years. The first of these is of the trend toward getting more power out of a given weight of engine and toward getting more energy out of a given weight of fuel. The second trend is toward greater reliability in operation. It is difficult to relate these trends to the fuels in any very specific manner, of course. However, these factors seem worthy of consideration as a matter of establishing a background, and as indicating some of the outstanding trends in automobile design. The first trend may be represented in a very simple manner. The average weights of a representative series of cars over a period of years from 1926 to 1934 show that the average weight has gone up from around 3,700 pounds to around 4,700 pounds or has increased above 25 per cent. At the same time the size of engine per ton of car weight has not changed to any considerable degree. As to what it has been possible to accomplish in the way of performance in the light of this situation, in 1926 the average top speed was about 57 miles per hour, but now it is over 80. In terms of economy the advances have also been considerable. While at 20 m.p.h. the gains have not been so very great until quite recently, at 50 m.p.h. there has been an increase of from less than 22 to over 31 ton miles per gallon, or a gain of almost 50 per cent.

"There has been a constantly shifting balance between the characteristics of the available fuels and the design of the engine. As the fuels which are generally available become better, either with respect to volatility or knock rating, the engine designers soon use these characteristics right up to the limit. But in working thus close to the limit some compromises are made in favor of performance, and so under certain conditions the limit is overstepped. The second one of the outstanding trends in automobile designed mentioned a few moments ago is that toward more reliable operation. One strong demand on the part of the public is for the removal of as many dash controls as possible in order to make operation of the engine as nearly automatic as practicable. Definite evidence of this trend is shown by the increasing adoption of automatic chokes, starting devices and manifold heat controls.

"In order to express this trend in quantitative manner we have computed the percentage of the total makes of cars which have had these devices as standard equipment, covering the models over a six-year period from 1930 to 1935. The data are presented graphically in Figure 1. These curves show that, while in 1931 no cars had automatic chokes, over half of the makes were so equipped by 1935. The volatility characteristics of the gasolines being distributed are of importance in relation to this trend. This is so for two reasons. The first reason arises from

(Continued on Page 35)

Carter Oil Builds New Plant in the Fitts Pool

The Carter Oil Co. is moving equipment from its Seminole plant to Fitts, Okla., preparatory for the erection of a 25,000 gallon natural gasoline plant in the Fitts Field. This is the second unit to enter the Fitts area, the Warren Petroleum Co. now operating a plant which was completed several weeks ago.

The Carter plant will be able to process up to about 15,000,000 feet of gas per day and is expected to make about 22,500 gallons per day when operating at capacity. Equipment will be included which will enable the company to turn out the low vapor pressure grades of natural gasoline as well as the regular 26 pound material. Construction has been started to the extent that foundations have been poured and a complete plant layout surveyed and operaton of the unit is scheduled to start about October 1.

California Association Honors Two Old Members

In electing Harold R. Linhoff, manager of the Signal Hill Gasoline Co., to the vice presidency, the California Natural Gasoline Association honored one of its oldest and most active members.

He graduated from the California Institute of Technology with the degree of B.S. in chemical engineering in 1920. His early training was as a chemist with the

HAROLD R. LINHOFF

city of Pasadena, as a chemist with the General Petroleum Corp., and Standard Oil Co., and then research chemist with the Union Oil Co. of California. From the Union he went to the Signal Hill Gasoline Co., a subsidiary of the Richfield Oil Co. Mr. Linhoff is a member of the Sigma Pi engineering fraternity and the Tau Beta Pi honorary engineering fraternity.

Tom Taggart, the new president, had been honored previously with an office of the association and is well qualified to carry on the constructive work done by the association under H. L. Eggleston. Mr. Taggart is contract superintendent for the Standard Gasoline Co. Like Mr. Eggleston, Mr. Taggart is a charter member of the C.N.G.A. In the years that he has been associated with the association he has held many important chairmanships, serving the past year as vice president.

Mr. Taggart was born in Ireland, obtaining his A. B. at the University of Belfast in 1912. Two years later the war interrupted his receiving his Ph.D. from the University of Leipzig, Germany. During the world war he served from 1914 for five years in the Royal Irish Rifles. After the war he came to California and enrolled at the University of California where he received his B.Sc. degree in 1921. Following his graduation his first position in the oil industry was with the Pacific Gasoline Co. which had just taken over the Wallace refineries. He assisted in the construction of a new type absorption plant at Taft, and until 1925 served as plant operator, gas tester, laboratory assistant and gas scout. In 1925 he was transferred to Los Angeles as field scout and contract agent and continued in that capacity for the newly formed Standard Gasoline Co. upon purchase of Pacific Gasoline Co. by the Standard in 1926.

Wallace McIlhany enters his sixth year as secretary and treasurer of the California Natural Gasoline Association.

NEWS FOR PETROLEUM REFINERS

Gasoline Consumption Up 5.8 Per Cent During March

Gasoline consumption as reflected in state tax returns increased 5.8 per cent in March of this year over the same period a year ago. Except for California every large consuming state showed substantial increases and special mention should be made of the gains made by Illinois, Indiana, Ohio, Kansas, Texas, Pennsylvania, New Jersey, New York, and Virginia. These data are compiled by the American Petroleum Institute from the individual state tax reports and following are the detailed figures:

GASOLINE CONSUMPTION BY STATES

	Gallons	
	Mar., 1935	Mar., 1934
Alabama	13,621,000	12,442,000
Arizona	6,400,000	6,064,000
Arkansas	10,833,000	10,407,000
California	109,193,000	136,314,000
Colorado	12,988,000	11,374,000
Connecticut	17,935,000	16,724,000
Delaware	3,158,000	2,695,000
D. of Columbia	8,767,000	7,689,000
Florida	26,196,000	24,077,000
Georgia	21,548,000	19,321,000
Idaho	4,310,000	4,769,000
Illinois	78,210,000	72,880,000
Indiana	40,669,000	34,617,000
Iowa	31,318,000	30,054,000
Kansas	32,343,000	27,377,000
Kentucky	14,823,000	13,078,000
Louisiana	14,425,000	13,575,000
Maine	5,796,000	5,623,000
Maryland	16,095,000	14,126,000
Massachusetts	40,588,000	38,910,000
Michigan	60,456,000	56,865,000
Minnesota	32,168,000	31,425,000
Mississippi	12,584,000	10,054,000
Missouri	38,997,000	36,894,000
Montana	6,216,000	5,824,000
Nebraska	15,206,000	16,710,000
Nevada	1,745,000	1,799,000
New Hampshire	4,270,000	3,389,000
New Jersey	59,329,000	50,651,000
New Mexico	4,417,000	3,755,000
New York	128,712,000	107,742,000
North Carolina	23,784,000	20,349,000
North Dakota	8,677,000	8,735,000
Ohio	78,187,000	69,816,000
Oklahoma	24,730,000	22,691,000
Oregon	13,480,000	13,152,000
Pennsylvania	87,345,000	82,370,000
Rhode Island	7,796,000	7,399,000
South Carolina	12,153,000	10,680,000
South Dakota	10,000,000	9,425,000
Tennessee	16,243,000	16,114,000
Texas	74,614,000	69,368,000
Utah	4,770,000	4,509,000
Vermont	2,674,000	2,342,000
Virginia	21,426,000	18,614,000
Washington	20,761,000	24,670,000
West Virginia	11,927,000	9,804,000
Wisconsin	30,420,000	30,842,000
Wyoming	3,953,000	3,623,000
Total	1,325,356,000	1,252,727,000
Daily average	42,753,000	40,411,000
Change from previous year:		
Total change	+72,619,000	....
Percentage change in daily average	+5.80%	....

MONTANA CRUDE SHIPMENTS

REGINA, Saskatchewan, June 15.—The Great Northern Railway has entered into the hauling of Montana crude for the Regina refinery of Imperial Oil, Ltd. The crude, heretofore run by pipe line to Coutts, Alberta, and thence shipped in C. P. R. tanks to Regina by way of Lethbridge, is now being moved over the G. N. R. by way of Minot, N. Dak. The Great Northern has constructed a double spur track and doubled the capacity of its loading racks at Cut Bank, Mont., where the crude is delivered by pipe line from the Cut Bank Field.

TIDE WATER WAGE INCREASE

TORONTO, Ontario, June 15.—Tide Water Oil Co. of Canada, through President L. C. Quackenbush, has announced a 5 per cent increase in wages, effective June 1. The company recently moved its head office and plant to larger premises at Weston Road, Toronto. The company operates branches in Montreal and Regina, with distribution throughout Canada.

Offer Evidence That Metals Absorb Appreciable Quantity of Lubricant

By WILLIAM F. PARISH
Industrial Lubrication Council, Inc.

There has recently been considerable discussion on the question of whether the metals absorb the lubricants. In this matter, this author had some interesting experiences from 1903 to 1911 in Europe in changing the lubrication of all classes of machinery over from the animal and vegetable oils to American mineral oils. Before the advent of the mineral oils all mechanisms were lubricated with the animal and vegetable oils and fats. These materials have a high rate of oxidation change. It was the custom to regularly remove the hardening deposits left by these lubricants, that had formed on all parts of the machines that were not in actual surface contact. The oils "gummed" and had to be removed with either solvents or by scraping.

It was the author's duty to conduct research work in the field of lubrication and on the actual machinery that was being lubricated to determine why the mineral oils always gave some degree of trouble during a sensitive period of changing over to mineral oils, which were of a very fine quality and highly suitable for the work. But, in a week or two, as a rule, serious complaints would be made that the machine bearings had run hot; had been inspected and found to be covered with a rubber-like deposit, or such deposits had been found in the bottom of the oil reservoir. Generally, the statement would be made that the mineral oils had been guaranteed against forming such deposits, and yet, this very thing had happened on the machine surface or in the small lubricating systems that had been especially cleaned for the test. In the assignment to correct this situation, the following study was made.

Before the mineral oils were put on a guide or in a bearing system, the surface would be examined. All loose, gummy material on the housings or in the clearances and tanks would be removed. The surfaces that were in contact and upon which the test was to be made were never touched. They were always found to be in a bright condition, with a good working film of the former lubricant, which had all of the characteristic odor and appearance of that oil on such a surface. No evidence could ever be found of anything that was not metal and lubricant. The material oil would be applied in the same manner and the same amounts as the former oils. The only noticeable difference in the film for several days would be in its bloom, especially if the bearing was under an arc light. The bloom would slowly change from that of the former oil to that of the new oil. Then shortly there would appear some slight pencil point spots on the guide surfaces, spaced irregularly. These would not float in the surface films but would be attached firmly to the top and bottom metal surfaces of the guides. These spots would slowly grow, becoming larger during the next several days, still irregular in shape and getting darker. In a day or so, they would combine and form

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WESTERN CANADIAN REFINING

CALGARY, Alberta, June 15.—A general restriction of refining operations and crude oil purchases throughout the Canadian West is indicated as a result of the inability of western Canada refiners to dispose of their fuel oil in Montana and adjacent states.

Until recently fuel oil from Canada was shipped into Canada duty free, but a duty of 21 cents a barrel has now been imposed. The restricted operations of Canadian railroads in the West and the large amount of coal available at low prices from Canadian mines have made it difficult in recent years to dispose of fuel oil in Canada. The Montana market for their heavy distillates, however, put the Canadian refiners in a position to finance the marketing of gasoline at greater distances, with resulting larger purchases of Montana crude. The restricted market for fuel oil as a result of the tariff has already had a marked tendency to limit refining operations in the prairie provinces.

Except for high grade naphtha from the Turner Valley Field, practically all the crude used in refineries in the three prairie provinces has come from the United States, and much of it from the Montana fields. At one time the major part of the Montana output was marketed in Canada.

TAX EXEMPTION RULES

The bureau has ruled that sheriffs or other law enforcement officers, when conducting the official duties of their offices, are exercising essential governmental functions and that all sales of gasoline and lubricating oil by the producers direct, or to dealers for resale direct for use in motor vehicles owned by state or political subdivisions may be made tax free.

The Bureau of Internal Revenue has ruled that fish and game commissions are exercising essential governmental functions and that sales of gasoline and lubricating oil by the producers thereof direct or to dealers for resale direct to such commissions may be made tax free under exemption certificates.

POLISH REFINERY REPORT

During the year 1934 the production of crude oil in Poland amounted to 529,205 tons, which in comparison with 1933 showed a further decrease in the production of about 21,460 tons. The consumption amounted to 60 per cent of produced crude.

The whole of this production was worked up by Polish refineries and the yields of the main products were as follows:

	Tons
Gasoline	84,899
Kerosene	171,717
Gas oil	92,454
Lubricants	75,713
Paraffin wax	22,835
Asphalt and coke	33,445
Total	481,063

CANFIELD OIL FIRE

A contract has been awarded the Austin Co., to rehabilitate the Canfield Oil Co. refinery at Coraopolis, Pa., which was destroyed by fire on Sunday, June 9. Officials announced that it is their hope to have the plant back in production within a month.

Cusco to Operate Former Security Petroleum Plant

WICHITA, Kans., June 15.—The 3,000-bbl. refinery of the Security Petroleum Corp. of Kansas City, which has been shut down for several months, will resume operations within the next few days, it was announced here today by Frank Unruh, Wichita oil operator, who with I. W. Siegel, also of Wichita, recently completed negotiations for the purchase of the plant, which was sold to satisfy claims of creditors.

The refinery will be operated under the firm name of the Cusco Oil & Refining Co., a Kansas corporation, and will have its general offices at Wichita.

Standish Pipe Line Co., subsidiary of the Phillips Petroleum Co., will supply the refinery with oil, which will operate on Rice County crude.

A 10-car loading rack has been built along a siding of the Santa Fe Railroad.

Although the operating capacity of the plant is 3,000 bbls., officials said that 1,000 bbls. of crude oil would be run to stills daily after the boilers are fired.

Ben Taxman, formerly of Kansas City, will serve as general manager. He has established offices at Chase. Jess Hughes is superintendent of plant operations.

A general wholesale business will be conducted by the company, which will manufacture gasoline, kerosene, and fuel oil.

NEW STILL IN HOWARD PLANT

Within two weeks the Howard County Refining Co. expects to place in operation its new 2,500-bbl. tube still. The addition of this still to the plant increases the crude capacity of the refinery to 2,500 bbls. per day, or about 1,000 bbls. more than the quantity of crude the original plant was able to process. The still is an all-welded job with T type headers. The company markets its products within the local area or within a radius of about 150 miles out of Big Spring.

NEW CRACKING PLANT

In the Skiff Field, southern Alberta, Devenish Petroleums, Ltd. has almost completed construction of its cracking plant to produce tractor fuel from the heavy crude of the Devenish wells. Nos. 1 and 3 got a fair flow of asphaltic crude around 3,000 feet. The plant is expected to produce about 20 to 25 bbls. a day, marketing the output to farmers in southern Alberta. As additional producers are completed the plant will be extended.

EXPORTS FOR MARCH

The following statistics of exports of petroleum and its products for the month of March, 1935, are furnished by the United States Department of Commerce:

Exports	Mar. 1934	Mar. 1935
	bbls.	bbls.
Petroleum	2,581,854	3,280,661
Natural gasoline	121,401	304,512
Gasoline	2,234,748	2,080,962
Illuminating oil	656,844	537,797
Gas oil and distillate fuel oil	1,542,902	1,225,039
Residual fuel oil	860,871	865,232
Lubricating oil	782,312	752,300
	pounds	pounds
Lubricating greases	7,168,167	7,755,946
Paraffin wax	21,162,767	21,899,316
	tons	tons
Petroleum coke	7,441	11,216
Petroleum asphalt	18,455	26,003

FALCON REFINERY FIRE

The Falcon Refining Co. at Great Bend, Kans., suffered a small fire in which approximately $10,000 worth of equipment was reported destroyed. The plant has been temporarily shut down but will be repaired. Producers supplying the oil are being forced to curtail runs.

Runs to Refineries in East Texas Field Were Up 1,550 Bbls. Daily

FORT WORTH, Tex., June 17.—Runs to refineries in the East Texas Field averaged 46,555 bbls. per day during the past week, 1,550 bbls. per day more than during the previous week.

What determination is to be made by the Federal Tender Board on oil confiscated and sold by the State of Texas, is expected to be decided this week as a ruling has been asked of Washington. The State has made several sales of confiscated oil, but the Federal Tender Board at Kilgore hesitated to say whether a federal tender would be granted on such oil.

East Texas refiners have agreed and adopted a resolution whereby they voluntarily pledged themselves to limit their production of gasoline to 644,000 bbls. for July and a similar amount for the month of August. This was the amount previously allocated to the East Texas Field.

WEEKLY TANK CAR SHIPMENTS
Week Ending June 9

	Cars	Gallons
Gasoline	597	4,798,983
Fuel oil	128	1,190,655
Residuum	6	48,960
Distillate	75	609,196
Casinghead gasoline	166	1,429,736
Kerosene	67	541,828
Gas oil	25	201,813
Naphtha	5	40,485
Topped crude	16	161,463
Total	1,085	9,023,119

Shipped under federal and state tenders:	No. cars
Interstate	546
Intrastate	71
Coastwise	324
Total	941
Shipped under state tenders only: Intrastate movement	132
Shipped under injunction: Intrastate movement	12
Total	1,085

Late Fields

OKLAHOMA

Mid-Continent Petroleum Corp. extended the Edmond Pool one location north with its No. 4 Young, NW SW NE Section 31-14-3w, on Monday, the well flowing 229 bbls. the first 15 minutes after cleaning out. It is the north offset to No. 3 Young recently completed and given a 9,317-bbl. potential. No. 4 had Wilcox sand at 6,485 feet and drilled to 6,700 feet. Pits are being dug for No. 5 Young, SW NW NE, and location staked for No. 6, NW NW NE of Section 31. In the same pool, Marathon Oil Co. deepened its No. 1 Dahl, SE SE SE Section 31-14-3w, west offset to the discovery well, from 6,533 feet to 6,643 feet and it flowed 2,273 bbls. in 16 hours on Sunday. No. 4 Dahl, NW NE SE Section 31, will be in before the week ends, as it is deep in Wilcox sand.

In the Fitts Pool, the Amerada Petroleum Corp.'s eastern extension well, No. 1 Smith, SE SW NW Section 28-2-7, was looking like a small producer, but an acid treatment may improve it. It is a half mile east of the nearest production. Attempts to wash-in the well were not successful and it was put on the gas-lift and made 7½ bbls. per hour. The crew was preparing to acidize. In the same pool, two new wells were brought in over the week-end. J. E. Crosbie and others' No. 2 Hardin, SE NE SE Section 30-2-7, flowed 632 bbls. per hour through casing and 155 bbls. in 15 minutes through tubing, total depth 4,285 feet. Magnolia Petroleum Co.'s No. 2 Simpson, SW SE NE Section 29-2-7, flowed 1,398 bbls. in three hours through casing, total depth 4,175 feet. E. H. Moore and others' No. 7 Craddock, NE SW SW Section 29-2-7, was to be drilled deeper. It flowed 90 bbls. per hour.

KANSAS

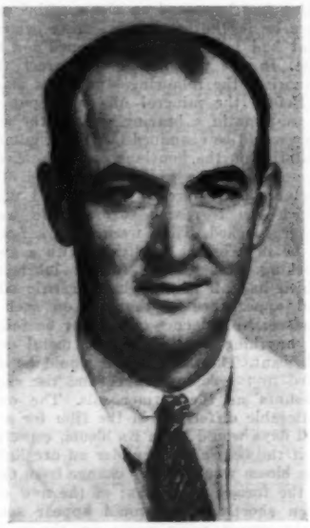
In Russell County, Kansas, Schaffer and others' No. 1, C NE SE SW Section 11-14-15w, with Siliceous lime at 3,298-3,305 feet, filled 900 feet with oil in four hours. Wakefield and others' No. 1, C NE SE SW Section 36-14-15w, filled 2,000 feet with oil from Siliceous lime at 3,171-74 feet.

In Cowley County, Lloyd and others' No. 1, C SW SE SE Section 28-31-3, tested 92½ bbls. of oil and 47 bbls. of water from sand at 3,339-44 feet, total depth 3,353½ feet.

In Rooks County, Phillips Petroleum Co.'s No. 1, C NE NW Section 6-9-17w, had Siliceous lime at 3,415-18 feet with no showing, and was cleaning out preparatory to setting casing.

Frank Brinegar Advanced By Continental Supply Co.

Frank I. Brinegar, who for the last two years has been assistant to the president of the Continental Supply Co., has been made vice president, President W. J. Morris has announced.



FRANK I. BRINEGAR

Mr. Brinegar has been connected with the company 14 years, beginning as salesman in Kansas. He became Mr. Morris' assistant two years ago and went to Dallas, Tex., at the time of the company's removal from St. Louis in October, 1933. He is a member of the Brook Hollow Golf Club and the Petroleum Club, and is a Shriner. He served overseas with the American army in France.

Search for Ordovician Oil in West Texas Field

(Continued from Page 21)

found in the Ordovician oil, another reason for Ordovician being sought.

Total cost of drilling the deep discovery well in the Big Lake Field was around $141,800, including casing. However, another Ordovician test in the district is said to have run over three times that figure, with no oil in commercial quantities having been discovered yet. These high costs for drilling the deeper tests precludes drilling by independents, although a few independents have and are now drilling some deep tests in the district, obtaining outside aid from major companies and others. However, if major fields are not forthcoming soon, major companies will not hesitate to spend more money in drilling deep tests in quest of Ordovician production.

Leasing for Deep Tests

Major oil companies have been leasing acreage on Permian lime "highs" on which dry holes have been drilled to the Permian, presumably with the idea of drilling Ordovician tests. Especially is this true along and on the well known Fort Stockton "high" north and east of that town in Pecos County. Humble Oil & Refining Co. has leased thousands of acres along this structure during the past two years, although it is dotted with dry Permian holes.

Acreage has been leased in and to the north of the old Westbrook Field, Mitchell County, that has been producing since 1920, and reports persist that one or more Ordovician tests will be drilled in that area.

Humble Oil & Refining Co., Shell Petroleum Corp., Gulf Production Co., Sun Oil Co., Stanolind Oil & Gas Co., Empire Gas & Fuel Co. and others are expected to drill a unitized test near old Fort Lancaster in south central Crockett County, but so far no location has been staked. Humble started an Ordovician test on the Couch ranch, in Section 3, Block QR, G.C.&S.F. Survey, 4 miles southeast of Ozona, same county, but recently temporarily abandoned it at a total depth of 1,881 feet. Elevation of the test is 2,538 feet. Whether this is to be carried deeper at a future date is not known at this writing.

WASHINGTON NEWS

(Continued from Page 10)

marketers may be assured fair access to markets" is provided for in the bill.

The Petroleum Advisory Committee is authorized to "assist in the formulation of voluntary agreements" in order to arrive at this conclusion, but there is nothing in the proposed bill which places any weight on the recommendations of the committee.

What is regarded as an attempt to "by-pass" the House Committee on Interstate and Foreign Commerce, members of which compose the Cole Petroleum Subcommittee, is seen in the rather innocuous appearing provision for an appropriation to sustain the Petroleum Administrative Board. If the proponents of the bill are able to, it is believed they will use this provision to send the bill either to the Ways and Means Committee, or to the Appropriations Committee, neither of which is cognizant of the problems which confront the oil industry.

One oil executive, with several years experience in the legal field of oil, has referred to the amended bill introduced by Senator Thomas as "An effort by legerdemain to disguise the real intent of the bill. This subterfuge will not fool the courts of the United States. It behooves every element in the oil industry to fight this bill to the bitter end, as the ultimate result means the complete nationalization of the industry. In the end every oil man will be taking his orders on how to run his business from some Washington brain-truster."

PAB Officially Dead

Controller General McCarl ruled that, despite the extension of the NRA through Congressional action, the Petroleum Administrative Board, the Petroleum Policy Board and the oil enforcement section of the Interior Department died on Sunday night, and could thereafter use no federal funds.

TO EXTEND FEDERAL TAX

WASHINGTON, D. C., June 17.—The House today passed a resolution to extend the nuisance taxes, including the federal gasoline tax, for two years. It now goes to the Senate.

Marland Is Opposed to Revised Thomas Bill

OKLAHOMA CITY, Okla., June 17.—Governor E. W. Marland today denounced the revised Thomas federal oil control bill as an attempt to "nationalize" the industry. He said provisions to set up a petroleum administration board under the Interior Department were unconstitutional in giving the board authority to regulate production within state borders.

Assurance from President Roosevelt that he will push efforts for a congressional ratification of the interstate compact came today, also in a letter from the President to Mr. Marland.

"Proposed legislation regarding oil is making some progress and I feel certain it will receive consideration of the Congress within a reasonable time," wrote the President. "In the event it is delayed unduly in its course, I will be glad to direct the attention of the Congress to the importance of the measure."

Governor Marland said he will not call a proposed conference of oil-producing states' governors until congressional action is taken. He had planned the conference this week to determine if "voluntary" methods to control production could be outlined.

The governor said:

"The bill gives the petroleum administrative board authority which to my mind it can't have—authority which is absolutely unconstitutional. It approves the compact and then puts the compact under a board which surely is not constitutional.

"That would give the board authority to come into the state in the case, say, of a field owned by 10 or 12 operators where half of the operators want to operate as a unit and the other half want to operate in their own way, and tell them what they've got to do about it. I think the Supreme Court has said time and again that they can't do that.

"It would be the board of 'Brother' Ickes and he could just call us down there and put us out of business any time.

"The first thing we want is approval of the interstate compact. We want to give the states the right to get together and do the things they've been trying to force us to do. What is so ridiculous about the whole thing is that Congress is contemplating forcing us to do something we've never been permitted to do—something we've been asking the right to do."

James Hutcheson Dies, Rio Bravo Executive

HOUSTON, Tex., June 17.—James Hutcheson, 51, vice president and general manager of the Rio Bravo Oil Co., died last week at the Methodist Hospital.

JAMES HUTCHESON

Mr. Hutcheson was born in Houston in 1883. A desire to visit China was responsible for him entering the oil industry. In 1903 he left Houston for California, intending to continue to China. On arriving in California he went to work for the Kern Trading & Oil Co., then the fuel department for the Southern Pacific Railroad in California.

In 1908 he was transferred to the Associated Oil Co., another Southern Pacific subsidiary, at Coalinga, Calif. He remained there until 1919, when he was put in charge of the company's operations in North Texas.

At the time of the Tide Water-Associated merger in 1926, Mr. Hutcheson was general superintendent of the latter's production activities in South Texas. He was called back in January, 1927, to the Southern Pacific group as vice president and general manager of the Rio Bravo Oil Co.

Continuing Firm Gasoline Price Structure Looked for in Chicago Area Market

By SPECIAL CORRESPONDENT

CHICAGO, June 17. — More reassurance on the outlook for a continuing firm gasoline market price structure appears felt by the trade here than since the overthrow of the petroleum code. If anything the market has been firmer, and this in the face of weather conditions which have been only moderately favorable, and in many sections decidedly poor.

Offerings of only comparatively small amounts of gasoline are reaching the trade except parts of Indiana and Michigan which can be reached most efficiently from Michigan, where a definite gasoline market seems to be slowly but steadily developing, on the heels of a gradual increase in crude production. For the general central territory served from the Mid-Continent markets are in good shape.

Plan for Holiday

Jobbers are beginning to give thought to Fourth of July needs and are ordering a little more generously. Temperatures are more nearly normal and rains are not so common. Back roads are slowly drying out. Jobbers seem to have given up the thought the federal gasoline tax will be removed June 30, and are not holding back orders on that account as much as some weeks ago.

Standard's additional three-tenths cent tank wagon and service station advance June 14 helped to place jobbers in a better mood, although many were hoping for a slightly larger advance. They are still complaining that the 5½-cent margin is insufficient to show a profit and are hopeful the margin policy will be liberalized shortly. Reports are conflicting. Another quarter-cent would not be surprising but there is nothing definite.

Some Raggedness

Michigan and a part of Indiana are troubled with ragged tank wagon and service station prices, especially on third grade. In the rest of the central states, the normal price structure is fairly well in effect, except that in Chicago and a few other large cities concessions have become common, averaging about 1 cent below. These consist both of definitely quoted lower prices and of dealer rebates. Detroit appears the most unsettled area.

Gallonage Slightly Off

As to gallonage, the first half of June seems to have continued the May performance as a general rule, compared with 1934—making a slightly unfavorable comparison, although results are generally felt to be good in view of weather. Shipments of major companies to contract accounts are fairly satisfactory. Spot market business as a whole has not been very active. Carlot marketers are finding it difficult to obtain concessions from refiners in buying. Jobbers are not especially anxious to buy.

Kerosene

Kerosene seems to be close to probably its final showing of the spring season. This season has been dragged out to unusual lengths this year by wet fields. Demand is still coming in dribbles. Prices are a shade easier, although no extensive pressure is noted. Stocks are not burdensome, but jobber demand is slow, although some major companies have been buying. Tractor fuels are fairly steady.

Heating Oils

Heating oils are slightly firmer at recently reduced prices. The offerings are mostly from East Texas and not in large quantities. Few large distributors seem to be willing to consider filling storage yet, although one distributor is bidding for his requirements fractionally below the present market on prime distillate.

Industrial Oils

Industrial fuel oils are quiet, the demand disappointing. Most prices continue about unchanged, with buying on a hand-

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Crude Oil Prices

(Continued from Page 27)

Humble Oil & Refining Co. and Texas Co. Effective September 20 in Salt Flat by Shell Petroleum Corp.

Rocky Mountain States

Iles light (Sept. 29, 1933)	$.95
Iles, heavy (Sept. 29, 1933)	.90
Florence, Colo. (June 17, 1933)	.80
Fort Collins and Wellington, Colo. (June 17)	(See Salt Creek prices)
Big Muddy (Sept. 29, 1933)	1.01
Frannie, light (May 1, 1934)	.70
Frannie, heavy (Sept. 29, 1933)	.62
Salt Creek and LaBarge (Sept. 29, 1933)	

See Stanolind Mid-Continent price schedule

Grass Creek, light (Sept. 29, 1933)	1.18
Grass Creek, heavy (Sept. 29, 1933)	.62
Elk Basin (Sept. 29, 1933)	1.18
Rock Creek (Sept. 29, 1933)	1.02
Lance Creek (Dec. 16, 1932)	.92
Hudson (June 2, 1931)	.65
Lost Soldier (Sept. 30, 1933)	.88
Hamilton Dome, all grades (Feb. 16, 1935)	.57
Torchlight (Sept. 29, 1933)	1.18
Greybull (Sept. 29, 1933)	1.18
Pondera (Sept. 29, 1933)	1.25
Sunburst (Sept. 29, 1933)	1.35
Cat Creek, Montana	1.07
Hogback (Sept. 29, 1933)	1.11
Lea County, N. Mex. (Sept. 29, 1933)	.75
Maljamar (Sept. 29, 1933)	.70
Artesia-Jackson (Dec. 1, 1933)*	.75

Note—Salt Creek, Torchlight, Elk Basin, Grass Creek, Frannie, Greybull, Hogback and Iles by Stanolind Oil & Gas Co. Elk Basin, Grass Creek light, Big Muddy, Rock Creek and Sunburst by Ohio Oil Co. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective September 29, 1933, by Humble Oil & Refining Co. and other buyers; Fort Collins, Wellington, Orchard, Florence, Big Muddy, Cat Creek, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro. Hamilton Dome, Wyo., by Stanolind Oil & Gas Co. Pondera, Mont., by Ohio Oil Co. (Stanolind Oil & Gas Co., effective January 1, 1935, posted $1 per barrel in Pondera.)

*Continental Oil Co.

North Louisiana and Arkansas

Smackover, Ark. (all grades)	$.70
Tullos, Urania, La. (Jan. 13, 1934)	.87
Nevada, Ark. (Sept. 29, 1933)	.60
East El Dorado (Sept. 29, 1933)	.70
Converse, La. (Mar. 17, 1934)	1.03
Elm Grove, La. (Sept. 29, 1933)	.75
Holly, La. (Nov. 17, 1934)	1.03
Pleasant Hill, La. (Mar. 17, 1934)	1.03
Zwolle, La. (Mar. 17, 1934)	1.03
Champagnolle, Ark. (Mar. 17, 1934)	.81
Lisbon, Ark. (Mar. 17, 1934)	1.03
Stephens, Ark. (Sept. 29, 1933)	.70
Urbana, Ark. (Mar. 17, 1934)	.60
Other fields	(See gravity table)

Note—Smackover: Effective September 29, 1933, Texas Co., Magnolia Petroleum Co., Standard of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co. and Phillips Petroleum Co. East El Dorado posted by Magnolia Petroleum Co. and Gulf Refining Co., Navada by Standard Oil Co. of Louisiana. Urbana posted by H. L. Hunt, Inc., and Louisiana Oil Refining Co. Converse, Holly, Zwolle and Urbana by Standard Oil Co. of Louisiana; Elm Grove by Simmons Oil & Refining Co.; Pleasant Hill by Standard Oil Co. and Magnolia Petroleum Co.; Champagnolle by Standard Oil Co. and Lion Oil & Refining Co.

Eastern States

TIDE WATER PIPE CO.
(Effective May 16, 1935)

Bradford, Pa.	$2.30
Allegany, N. Y.	2.36

SOUTH PENN OIL CO.
(Effective May 16, 1935)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field)	$2.26
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.92
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.87
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.77
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Oct. 2, 1933)	1.37

PENNZOIL CO.
(Effective May 16, 1935)

Pennsylvania Grade Oil in National Transit Lines:

Group A (Includes Cochran, Franklin, Hamilton and Doolittle districts.)	$2.17
Group B (Includes Titusville district.)	2.16
Group C (Includes Turkey and Tidioute districts.)	2.15
Group D (Includes Bear Creek and Porkey districts.)	2.14
Group E (Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacey and Kinzua districts. Price depends on length of pipe line haul to plant at Oil City.)	2.11

PURE OIL CO.
(Effective May 16, 1935)

Cabin Creek, W. Va.	$1.87
Bradford Hollow, W. Va.	1.87
Kelly Creek, W. Va.	1.87

Middle Western States

OHIO OIL CO.

Lima (Feb. 1, 1935)	$1.16
Illinois (Jan. 5, 1934)	1.13
Princeton, Ind. (Jan. 5, 1934)	1.13
Plymouth	Shut in
Midland, Mich. (Sept. 30, 1933)*	1.03
West Branch, Mich.	.86
Oceana, Mich. (Oct. 5, 1933)	.96
Somerset, Ky. (May 20, 1935)	1.13
Western Kentucky (May 22, 1935)	1.13

*Posted by Pure Oil Co. and Simrall Pipe Line Co. Producers Pipe Line Co. pays 5 cents per barrel over Pure Oil Co.'s posted prices. West Branch, Mich., posted by Simrall Pipe Line Co. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and posted prices includes premium. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co.

Canada

Ontario (September 9, 1933):	
Petrolia*	$2.10
Oil Springs	2.17
Turner Valley (May 21, 1934):†	
Clear naphtha	$2.55
Discolored naphtha	2.37
Crude oil, 50 gravity	2.19
Crude oil, 45 to 49.9	2.07
Crude oil, 40 to 44.9	1.50

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Mexico

Panuco*	$1.01

*F.o.b. ship, based on April transactions and exclusive of production and export taxes and bar dues.

California Crude Oil Prices

STANDARD OIL CO. OF CALIFORNIA
(Effective September 6, 1933)

For current purchases of crude oil at the well (unless otherwise specified). (All gravities above those quoted take highest price offered in that field)

Gravity—	Long Beach	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier, La Habra	Montebello	Santa Fe Springs	La Habra-Coyote	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Coalinga	Coyote
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	....	$.65	$.65	$.65	$.65	....	$.65	$.57	$.57	$.57	$.65
15-15.9	.65	.65	.69	.69	.66	.69	....	.66	.65	.65	.65	....	.65	....	....	....	.65
16-16.9	.66	65	.72	.73	.69	.73	....	.69	.67	.68	.65	....	.65	....	....	....	.65
17-17.9	.69	.65	.75	.76	.73	.76	....	.72	.70	.71	.65	....	.68	....	....	....	.68
18-18.9	.72	.65	.78	.80	.76	.79	....	.75	.74	.74	.65	....	.71	.61	.61	.59	.71
19-19.9	.75	.65	.81	.83	.80	.82	....	.78	.78	.78	.65	....	.74	.64	.65	.62	.74
20-20.9	.78	.68	.83	.87	.83	.85	....	.81	.82	81	.66	..	.78	.67	.69	.65	.78
21-21.9	.81	.72	.86	.90	87	.88	....	.83	.85	.84	.69	$ 72	.81	.70	.73	.68	.81
22-22.9	.84	76	.89	.94	.90	.92	....	.86	.89	.87	.72	.76	.84	.73	.76	.72	.84
23-23.9	.88	.81	.92	.97	.94	.95	$.83	.89	.92	.90	.76	.79	.87	.77	.79	.75	.87
24-24.9	91	.85	.95	1.01	.97	.98	.86	.92	.97	.93	.80	.83	.90	.81	.82	.78	.90
25-25.9	.94	.89	.98	....	1.00	1.01	.90	.95	1.00	....	.85	.87	.93	.85	.85	.81	.93
26-26.9	.97	.93	1.01	....	1.04	1.04	.94	.98	1.04	....	.89	.90	.96	.89	.88	....	.96
27-27.9	1.00	.98	1.04	....	....	1.07	.97	....	1.08	....	....	.94	.99	.93	.91	....	.99
28-28.9	1.03	1.02	1.07	....	....	1.10	1.01	....	1.11	....	....	.98	1.02	.97	.94	....	1.02
29-29.9	1.06	1.05	1.09	....	....	....	1.04	....	1.15	....	....	1.01	1.05	1.01	.97	....	1.06
30-30.9	1.09	1.10	1.12	....	....	....	1.08	....	....	....	....	1.05	1.09	1.05	1.00	....	1.09
31-31.9	....	....	....	....	....	....	1.12	....	....	....	....	1.08	1.12	1.09	....	....	1.12
32-32.9	....	....	....	....	....	....	1.15	....	....	....	....	1.12	1.15	1.13	....	....	1.15
33-33.9	....	....	....	....	....	....	....	....	....	....	....	1.16	1.18	1.17	....	....	1.18
34-34.9	....	....	....	....	....	....	....	....	....	....	....	1.19	1.21	....	....	....	1.21
35-35.9	....	....	....	....	....	....	....	....	....	....	....	1 23	....	....	....	....	....
36-36.9	....	....	....	....	....	....	....	....	....	....	....	1.26	....	....	....	....	....
37-37.9	....	....	....	....	....	....	....	....	....	....	....	1.30	....	....	....	....	....
38-38.9	....	....	....	....	....	....	....	....	....	....	....	1.34	....	....	....	....	....

Additional Standard Oil Quotations

Mountain View—Effective July 3, 1934, the following are the prices of the Standard Oil Co. of California for its current purchases of crude oil at the well in the Mountain View Field: 14 to 19.9 degrees, 57 cents; 20-20.9, 58 cents; 21-21.9, 59 cents; 22-22.9, 61 cents; 23-23.9, 63 cents; 24-24.9, 66 cents; 25-25.9, 69 cents; 26-26.9, 72 cents; 27-27.9, 75 cents; 28-28.9, 78 cents; 29-29.9, 81 cents; 30-30.9, 84 cents; 31-31.9, 87 cents; 32-32.9, 90 cents; 33 and above, 93 cents.

Elwood Terrace—F.o.b. ship, 33 degrees, $1.03; 34 degrees, $1.06; 35-35.9, $1.09; 36-36.9, $1.12; 37 degrees and over, $1.15.

Newhall—14 degrees and over, 57 cents.

McKittrick and Kern River—14 degrees and over, 57 cents.

Wheeler Ridge—14 to 17.9 degrees, 57 cents; 18-18.9, 58 cents; 19-19.9, 61 cents; 20-20.9, 64 cents; 21-21.9, 67 cents; 22-22.9, 70 cents; 23-23.9, 73 cents; 24-24.9, 76 cents; 25 degrees and over, 79 cents.

Kettleman Hills—33-33.9 degrees, 93 cents; 34-34.9, 96 cents; 35-35.9, 99 cents; 36-36.9, $1.02; 37-37.9, $1.05; 38-38.9, $1.08; 39 degrees and over, $1.11.

The Texas Co. posted in Shiells Canyon, South Mountain and Santa Paula as follows: 14 to 17.9, 57 cents; 2 cents added for each degree up to and including 26-26.9 degrees at 84 cents; then 4 cents added for each degree up to and including 30 degrees and over at $1. Company posts Standard Oil Co.'s Montebello prices in Montebello and North Whittier, and posts Standard Oil Co. prices in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield and Santa Fe Springs, all effective September 6.

General Petroleum Co. posts Standard Oil Co. prices in Athens, Rosecrans and Signal Hill; Alamitos Heights up to 26-26.9; Santa Fe Springs up to 35-35.9; Richfield up to 25-25.9; Brea Canyon and Olinda up to 25-25.9, and Torrance up to 25-25.9.

Union Oil Co., effective September 6, posts same price as Standard Oil Co. in all fields in which both purchases, excepting that in Athens-Rosecrans. Union Oil Co. posts 21-21.9, 72 cents, and 33-33.9, $1.18; 34-34.9, $1.21, and 35-35.9, $1.24.

Associated Oil Co., effective September 6, posted same prices for the same grades as Standard Oil Co. of California, excepting that in some fields its gravity scale stops as follows: Huntington Beach, 26 degrees and over; Seal Beach and Alamitos Heights, 36 degrees and over; Coyote Hills, 23 degrees and over; Richfield, 25 degrees and over; Torrance, 25 degrees and over; Inglewood, 24 degrees and over; Santa Fe Springs, 35 degrees and over; Midway-Sunset, Elk Hills, Buena Vista Hills, 30 degrees and over. Also Associated pays 52 cents for oil of 11 to 13.9 gravity in McKittrick, Kern Front, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills and Coalinga.

NATURAL GAS DEVELOPMENTS

Kansas Commission Calls Conservation Conference

TOPEKA, Kans., June 17.—The Kansas Corporation Commission will meet with natural gas producers and landowners at Wichita, June 19 to discuss tentative regulations for the conservation and production of natural gas in this State. The 1935 legislature passed a new conservation law which becomes effective July 1.

The commission has been studying the law and the gas situation in Kansas since the new enactment was published, Homer Hoch, chairman of the commission, said, and will be prepared to offer some tentative rules and regulations, as the law requires.

"There are some serious problems confronting us in the enforcement of this law," said Mr. Hoch. "It is widely different than oil proration as the problems are more involved. The law gives us ample authority to regulate all the production of gas in wells of more than 750,000 feet daily open flow. Just how we will go about enforcing some of the provisions of the law in the light of conditions in the oil and gas fields is a question of serious study on the part of everyone concerned in gas production in this State."

The law specifically limits the marketing of gas to 25 per cent of the open flow of any well in any single day. The commission may make rules limiting the production to below that figure and as equitably as possible in the different fields, but it cannot permit a higher production at any time.

One of the chief problems will concern those fields where both oil and gas is produced from the same well and where there is now no market for the gas. There are several fields of this nature in which there are no gas pipe lines available. Just what the commission may do to limit the gas production when there is also an oil flow in the same well, no market for the gas but a market for the oil, is one of the hardest problems before the commission.

Kansas Gas Rate Case to Be Concluded June 24

TOPEKA, Kans., June 17.—The Kansas gas rate case is to be concluded June 24 so far as the taking of evidence is concerned. Homer Hoch, chairman of the Kansas Corporation Commission, said there would be no further hearings in the case unless the attorneys desire to make oral arguments. He doubted if there would be any arguments except the printed briefs of both sides.

"The engineers for the State virtually have completed their revisions and corrections of the engineering questions in the case," Mr. Hoch said. "The accountants have completed most of their work. The attorneys for the gas company and for the State have made an agreement that all the figures are to be completed and submitted by both sides by June 24.

"There will be no further oral testimony and no hearings unless the lawyers desire to make oral arguments. They did not present oral arguments in the preceding hearing, so I do not expect them to be requested this time. We will allow a reasonable time after June 24 to file briefs, and when they are completed the commission will begin study of the evidence and the arguments preparatory to making a decision as early as possible, probably late in July or early in August."

Moisture in Natural Gas

By E. G. HAMMERSCHMIDT
Texoma Natural Gas Co.*

Moisture in natural gas pipe lines may be present in both liquid and vaporous state, or it may be present in a vaporous state only. If liquid is present a number of operating difficulties may arise during the transportation and measurement of the gas. The accumulation of water in low spots may seriously diminish the capacity of a pipe line; the blowing of drips to remove water causes a waste of gas; liquid water is usually one of the contributing causes wherever serious corrosion occurs; water together with pipe line scale or even water alone may cause erosion of the pipe; water in meter runs causes inaccurate measurement; water in an intake line to a gas compressor engine may result in a head failure; the water may solidify and cause partial or even complete plugging of pipe lines, meter orifices, valves or regulators.

In order to obtain a clearer perception of the behavior of moisture in natural gas, a few of the fundamental principles involved will be briefly discussed at this time. When natural gas remains in contact with liquid gas, it will acquire water vapor from the liquid until the partial pressure of the water vapor at its existing temperature and when the water vapor concentration reaches this equilibrium value the gas is said to be "saturated" with the water vapor. It is not possible for the gas to contain a greater stable concentration of vapor, because, as soon as the vapor pressure of the liquid is exceeded by the partial pressure of the vapor, condensation takes place. The vapor content of the saturated gas is determined entirely by the vapor pressure of liquid water and may be predicted directly from vapor pressure data.[6] However, the presence of the natural gas above the liquid water is known to have an effect on the equilibrium vapor pressure of the liquid.[7] The magnitude of this effect depends upon the total pressure of the gas on the liquid surface, the equilibrium vapor pressure increasing with an increase in total pressure. In other words the fugacity, which may be considered as a corrected vapor pressure, increases with the total pressure.

Solidification

When natural gas emerges from the well, it is usually saturated with water vapor. Therefore, if the temperature of the pipe line through which the gas is to flow is lower than the temperature of the emergent gas, water will immediately condense on the walls of the pipe. If this water remains in the liquid state it can be partially removed by means of traps or "drips" which are located in low places along the pipe line. If the water solidifies, the situation becomes much more complicated. This solidification is not simply ice or frozen water.[8] It has been found that methane, ethane, propane, isobutane, carbon dioxide and hydrogen sulphide, all of which may be constituents of natural gas, will unite with water to form crystalline gas hydrates. A hydrate is a compound in which water is present in fixed and simple molecular proportions and in the present case they appear to contain 6 or 7 molecules of water per molecule of gas, e.g., $CH_4.6H_2O$. These natural gas hydrates as formed in pipe lines, regulators, meter runs, etc., usually resemble ordinary snow in appearance, although in cases where there is little if any agitation, the resultant hydrate will be transparent like ordinary ice. One of the properties of natural gas hydrates that is of importance to the gas industry is the fact that the melting point of the hydrates increases with the total pressure. This relationship between pressure and melting point was determined with a Texas Panhandle "dry" gas.[4] It is as follows:

$$Y = 8.9X^{0.285}$$

where:
Y = temperature, ° F.
X = absolute pressure, lbs. per sq. in.

From this relationship it may be observed that the melting point of the hydrates will vary from about 34° F. at 110 pounds per square inch to about 60° F. at 800 pounds per square inch. This property of gas hydrates will explain the reason for so many "freeze-ups" in natural gas pressure systems even though the temperature may be well above 32° F.

Clogging of Line

Another property of gas hydrates that is of importance to the gas industry is the fact that the vapor pressure of the hydrate is lower than the vapor pressure of liquid water at the same temperature. This means that for equilibrium conditions, the hydrate will cause more water to be removed from the vapor phase than in the case of liquid water, and as a result it hastens the clogging of the line.

There are several methods that may be used to prevent, or when once formed, to decompose the solid gas hydrate in a pipe line. Meter runs are sometimes heated externally by a steam-heated jacket surrounding the pipe. Where steam is not available such as in isolated field metering stations, specially constructed gas heaters have been used. These gas heaters may heat a meter house or they may be constructed in a manner which is similar to the steam or hot water heated jacket. In either case care must be taken that the open gas flame is so protected that the gas from any accidental leaks will not become ignited. Also the gas flame must be protected from sudden drafts that might extinguish the flame. This method of preventing freezing in a pipe line is obviously unsuited for underground pipe. In the latter case, when constructions occur due to hydrate formation, alcohol may be injected on the upstream side of the point of constriction. The alcohol causes the solid hydrate to melt, when it may then be partially removed from drips along the line. An alternate method is to release the pressure on the pipe line, in which case all of the gas hydrate will decompose. If the pipe line is buried below the frost line so that ordinary freezing cannot occur, this method is usually effective. However, unless the constriction is located between closely spaced shut-off valves, this method necessitates the waste of a considerable amount of gas. Also, when the pressure on the line is being reduced, a certain amount of cooling will occur which will increase the time required for the solid material to melt even after the pressure has been released. Either method is likely to prove expensive.

Recompression

When natural gas is to be transported long distances through pipe lines, it is necessary to recompress the gas in order to overcome friction losses. When the pressure on the system is thus increased at one of these compressor stations, the moisture content of the gas may be affected. For illustration, suppose that the water saturated gas from a field gathering system enters the compressor station at 300 pounds per square inch and a temperature of 60° F. The gas will contain 43.3 pounds water per million cubic feet (at 14.65 pounds per square inch and 60° F.) of gas under these conditions. If the gas is now recompressed to 600 pounds per square inch and the heat of compression is removed by means of after coolers so that the temperature of the outlet gas is again reduced to 60° F., the water carrying capacity of the gas will be reduced to 23.0 pounds per million, i.e., water will be condensed in the amount of 20.3 pounds per million. If, however, the after coolers should reduce the temperature of the 600-pound per square inch gas to only 79° F., the water carrying capacity would be 43.3 pounds per million and there would be no condensation at this temperature or, for that matter, at any higher temperatures, unless the pressure should be increased. It may be seen from the above example that a compressor station may or may not cause the condensation of some moisture, depending upon the working temperatures and pressures.

Absorption Plants

Gasoline absorption plants may be a contributing cause of the introduction of additional moisture into the gas. Steam is usually injected directly into the fat absorption oil in order to strip the oil of its gasoline content. The resultant lean oil may contain from 0.1 to 0.2 per cent by volume of moisture unless special measures are adopted to dehydrate the oil. This amount of moisture in the lean oil is usually more than enough to completely saturate the gas with which it is contacted. Also, the heat of solution of the gasoline vapors in the absorption oil is usually sufficient to increase the temperature of the outlet gas several degrees, thus increasing the water carrying capacity of the gas. For example, assume that gas from a gathering system is saturated with water vapor at 300 pounds per square inch and 60° F., i.e., it contains 43.5 pounds water per million, and after passing through a gasoline absorption plant, the temperature of the gas is increased to 70° F. Since there is sufficient moisture in the oil to saturate the gas at the increased temperature, the outlet gas will have a moisture content of 61 pounds per million, an increase of 17.5 pounds. Even though the gas from the gathering system is only partially saturated with water vapor, the gas will "pick up" additional moisture from the oil so that the resultant outlet gas at 70° F. will still contain the same amount of moisture as in the previous case.

Operating difficulties that are caused by the condensation of water in gas systems may be serious enough to warrant the dehumidification of the gas. The various processes for dehumidifying gas may be classified as follows: compression, cooling, drying agents, or a combination of these methods.

Compression and Cooling

An example of the effect of compression and cooling was given above.

Drying agents may be classified as follows:[1]

1. Anhydrous or partially dehydrated solid salts which absorb water to give solid reaction products. For example. $CaCl_2.H_2O + H_2O = CaCl_2.2H_2O$.

2. A solid which absorbs water to give a saturated solution, such as sodium hydroxide.

3. A liquid which absorbs water to give a solution of low vapor pressure, such as

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*Before Southwestern Gas Measurement Short Course, Norman, Okla.

Volatility Classification of Motor Fuels Suggested

(Continued from Page 30)

the fact that, both during starting and the subsequent warm-up period, the automatic choke relieves the driver of the necessity of choke manipulation—which at best is an operation to be regarded as somewhat of an art. The consequence is that small differences between fuels in regard to the aspects of volatility which have been thought of as being important in this connection are not always brought to the attention of the driver. The second reason why the volatility characteristics of gasolines are of importance in relation to these automatic devices is more critical. It is concerned with those gasolines which differ markedly from the conventional in respect to ease of vaporization, particularly at the lower end of the distillation curve, and which under some temperature conditions may altogether prevent starting and warm-up.

"An automatic choke must be designed for operation on gasolines of definite vaporization characteristics. If the choke is adjusted to give a mixture which will keep the mixture delivered to the cylinders within the explosive limits with a gasoline of conventional vaporization characteristics, missing or actual stopping is likely to occur when the engine is operated on fuels which are either much less volatile or much more volatile than the original fuel for which the choke was adjusted. The less volatile fuel, although choked by the same amount as the original fuel, gets outside the limit of inflammability on the lean side as a result of unequal distribution and a smaller amount of evaporation, and the more volatile fuels get outside the range of inflammability on the rich side on account of unequal distribution and a greater degree of evaporation. Experence in the past has indicated that satisfactory starting is obtained in winter in most parts of the United States with conventional winter gasolines of the present, between 110 and 130° F. at the 10 per cent evaporated temperature, and have Reid vapor pressures between 9 and 12 pounds.

"Since there is a general relationship between fuel volatility and the amount of heat that must be applied to the mixture it would be desirable to know the trend of mixture temperatures in current automobiles. A limited amount of data on the downward trend in mixture temperatures for a representative group of passenger car engines show there has been a drop during the past four years of nearly 30 degrees. However, since these measurements were all obtained under comparable operating conditions and by a standard technique, they do indicate a definite trend toward the application of less heat to the intake manifold.

Offer Evidence Metals Absorb Lubricating Oils

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a continuous and complete film. This formation, however, was a rare event, as generally, long before this happened, some of this varnish-like film would have broken away from the metal, rolled up between the moving surfaces, pack back in the oil ways or oil holes, thus stopping the flow of oil and causing a hot bearing. But, with care and constant attention, low speed and small quantities of oil and the right kind of surfaces to observe, enough of this film could be formed so it could be cut loose with a knife blade into a long, continuous strip, sometimes the width of the guide.

Where a bearing such as a pillow block was under observation, the deposits would appear on the surface in time but would never form into a continuous film. This was because these bearings were usually supplied with profuse amounts of oil fed through small circulating systems. The subsurface deposits would come out, could be observed, occasionally causing trouble by a stoppage of the feed, but the full deposits would only accumulate in the bottom of the lower oil or drain tanks of the circulating system. The dry films would be reported upon as consisting of from 70 to 85 per cent of free fatty acid of animal or vegetable origin as the case might be, some free mineral oil, very slight traces of former oil, some iron oxide, and traces of room dirt and of other metals. With the wet samples, the amount of free fatty acid would be smaller and the amounts of mineral oil would be greater, but all other items would remain about the same.

This rubber-like material was not in any way related to the new mineral oils. Where did it come from? The obvious conclusion was that the material had formed through oxidation of the former oils, and had in some manner hidden in what must be a continuous system of back spaces in all metals. In so doing, the deposits had filled the spaces so as to exclude the liquid oil, as only traces of the former oil were ever found. This solidified free fatty acid had been slowly mechanically displaced by the new mineral oils, as there was no solvent action indicated.

The solution to this problem was worked out by establishing a system of gradually increasing mixtures of the new mineral oil with the former oils. In this way, these fatty acids were more gradually removed, and in smaller amounts which could be flushed away by profuse oiling, so no harm would follow. Never afterwards was there a report of a bearing failure due to changeover as long as these simple rules were carried out, and the rapid advance in sales all over the world proved that the real solution had been found. It also proved that this metal condition was not a local phenomenon, but that it existed wherever machinery was being lubricated with the primitive lubricants. This covers so many cases of machine and metal conditions as to establish the universality of these phenomena.

Demand and Production of Road Asphalt Revived

(Continued from Page 29)

443 in 1934. The principal increases were in exports to northern and western Europe especially to the United Kingdom and France; and to the Far East, notably Netherland India, French Indo-China and New Zealand. In the Mediterranean region Italy and Spain increased their asphalt imports from the United States. In the Indian Ocean region increased exports to British Malaya, to Ceylon, and to Mozambique counteracted a decrease in sales to British India.

Domestic demand for asphalt during the first three months of 1934 averaged 11 per cent below the demand for the first quarter of 1933. In the second quarter of 1934, however, the indicated demand was 14 per cent higher than in the corresponding three months of 1933. From July to September asphalt demand exceeded by 18 per cent the quantity required in the corresponding months of 1933. In the last three months of 1934 the indicated demand for asphalt was 12½ per cent higher than in the last quarter of 1933.

The tonnage of asphalt (natural, by-product, or petroleum) terminated by Class 1 railroads in the United States totaled 2,757,897 short tons in 1934, an increase of 14.6 per cent over the 2,407,553 tons terminated in 1933, according to statistics received from the Interstate Commerce Commission. The gains were general over the United States, but were greatest west of the Mississippi River and the Great Lakes, especially in the wheat growing and corn growing states west of the Great Lakes. Considerably more asphalt was terminated in the Pacific and Rocky Mountain states in 1934 than in 1933. The smallest increase in railroad deliveries of asphalt was in the southwestern states. East of the Mississippi River and Lake Michigan, the greatest increases were in the Great Lakes region and in the states south of the Ohio and Potomac Rivers.

Refinery ghosts

More than one refining unit marks the spot where somebody's error in design lies buried.

Maybe you can't find the error, but its ghost walks—to blight yield and quality of products, to swell operating costs and shrink earnings.

Parsons designs and builds special Dubbs units to make cracked gasoline, and special Parsons' units to make other products that command a market and command a price.

Parsons-built units are designed to fit your individual needs, big or little.

Parsons guarantees their performance.

No mistakes—no ghosts.

PARSONS

THE RALPH M. PARSONS CO.

MT. VERNON, OHIO LOS ANGELES

Text of Revised Thomas Oil Control Bill

WASHINGTON, D. C., June 17.—The text of the substitute federal oil control bill introduced by Senator Thomas of Oklahoma to replace the bill reported by the Senate Committee on Mines and Mining follows:

Text of the Bill

A bill to consent to an interstate compact, to conserve petroleum resources, to regulate commerce in petroleum, and for other purposes.

Findings

Section 1. Petroleum is an exhaustible natural resource the prevention of the waste of which in time of peace as well as in time of war is essential to provision for and the maintenance and support of the Army and Navy, to the economic and efficient operation of and provision for the instrumentalities of interstate and foreign commerce, and to the economic and efficient operation of and provision for industry in the United States required for the maintenance and support of the Army and Navy. Waste of petroleum is prevented by the orderly, systematic and scientific development of fields or pools of petroleum and by the balancing of supply with demand.

Movement in commerce of petroleum and petroleum products in excess of current demand therefor, directly and injuriously affects commerce in petroleum among the several states and with foreign nations and causes waste of petroleum.

To balance supply with demand and thereby to prevent waste it is necessary and desirable to co-ordinate commerce in petroleum among the several states and with foreign nations and to co-ordinate state and federal activities with respect to petroleum.

Petroleum moves in commerce in a constant and continuous current in which that which moves in intrastate commerce is commingled with that which moves in interstate or foreign commerce and directly affects it, so that such regulation of commerce as is herein authorized is essential to the regulation of commerce in petroleum among the several states and with foreign nations.

Consent to Interstate Compact

Sec. 2. The consent of Congress is hereby given to an interstate compact to conserve oil and gas, executed in the city of Dallas, Tex., the 16th day of February, 1935, by the representatives of the States of Oklahoma, Texas, California and New Mexico, and there recommended for ratification by representatives of the States of Arkansas, Colorado, Illinois, Kansas and Michigan, and since ratified by the States of New Mexico, Kansas, Oklahoma and Texas, for the purpose of conserving oil and gas and preventing the avoidable waste thereof within reasonable limitations by the prevention of physical waste by the means specified in Articles 3 and 4 of said compact, which compact is now deposited in the Department of State of the United States: Provided, that nothing therein or herein contained shall impair or in any manner affect, or be construed as impairing or in any manner affecting, any right, power, or jurisdiction of the United States: And provided further, that in the event it shall be found by the board created by Section 3 of this act, at a hearing to which the governors of all the compacting states, or their respective representatives, are invited to attend, that the compacting states are acting beyond the scope of the terms of the said compact or in a manner not consistent with the purposes of this act, it shall so certify to the President, who shall in such event by proclamation suspend the operation of said compact pending further consideration by the Congress, which may under said circumstances or for any other reason or at any other time withdraw its consent to and terminate said compact.

Petroleum Administrative Board

Sec. 3. There is hereby established in the Department of the Interior the Petroleum Administrative Board to be composed of five members, one of whom shall be chairman. The members shall be appointed by the President for six years, except that two of the original appointees shall be appointed for terms of two years, two for four years, and one for six years, and except that any person appointed to fill a vacancy shall be appointed only for the unexpired term of his predecessor. The members shall hold office until their successors are appointed and qualify, and shall receive compensation at the rate of $9,000 per annum. The board shall function under the general supervision of the Secretary of the Interior. The board shall appoint such qualified and trained employes as may be necessary in carrying out the purposes of this act, and their compensation shall be affixed in accordance with the Classification Act of 1923, as amended. The scientific and professional employes of the board shall be selected solely upon the basis of their scientific or professional qualifications. The board from time to time shall elect a vice chairman to act in the absence of the chairman. The board shall have a seal which shall be judicially recognized.

The board shall co-operate with executives, officials and agencies of the states and with any agency created under the interstate compact consented to by this act in the study and investigation of the status of petroleum reserves and sources of supply to encourage the discovery and systematic and orderly development of sources of supply, to assist in improving methods of production, to study the possibility and expense of repressuring existing fields and related matters pertaining to the petroleum industry, and may hold joint hearings upon such matters with any authorized agency. It is authorized to make investigations and collect data from the industry and to this end it may require reports from persons engaged in the industry and may examine and inspect books, records, papers and properties for the purpose of verifying such reports and ascertaining the facts. The several departments, bureaus and agencies of the United States shall at its request provide the board with records and information which they may have available pertaining to the petroleum industry. The board is authorized to make such rules and regulations as may be necessary to carry out the provisions of this act and to determine procedure for hearings, and it shall have the power to examine witnesses, receive evidence, administer oaths and affirmations, and to take affidavits and depositions.

Rules and regulations issued under this act and orders or determinations made under Sections 5, 6, 7, 9 and 13 before becoming effective shall be reviewed and approved by the Secretary of the Interior if found by him to conform to the provisions of this act relating thereto.

Advisory Committees

Sec. 4. The President is hereby authorized and directed to appoint a Petroleum Advisory Committee from the petroleum industry and such other advisory committees as deemed necessary by him. The Petroleum Advisory Committee, and other advisory committees if appointed, may make recommendations to the Petroleum Administrative Board and perform such other functions as may be delegated to it by the President. No funds appropriated from the Treasury of the United States shall be expended for any purposes of such committees.

Approval of Plans for the Orderly, Systematic and Scientific Development of Pools or Fields

Sec. 5. The board is authorized to approve voluntary agreements between and among persons engaged in the petroleum industry or plans for the orderly, systematic and scientific development of fields or pools where it finds after hearing that such agreements or plans will protect interstate or foreign commerce, prevent waste, or aid in providing for the support and maintenance of the Army and Navy. A field or pool within the meaning of this section is any commercially productive accumulation of crude petroleum in its natural reservoir. Whenever any such agreement or plan has been executed by a majority in both number and interest of the persons having the right to produce oil from said field or pool as determined by the board, and approved by said board, and the board has reason to believe that any person is engaged in drilling or other activities affecting said field or pool which disrupt or threaten to disrupt the effective operation of the agreement or plan incorporated therein, or plan, the board shall immediately call a hearing at a time and place convenient to all parties in interest as determined by it, and shall through the medium of such hearing determine whether the purposes of this act to protect interstate or foreign commerce, to prevent waste, or to aid in providing for the national defense, will be defeated or threatened with defeat by such drilling or other activities, and should it find that any of such purposes will be defeated or threatened with defeat, it shall order such person to cease and desist from such drilling or other activities.

In the approval of any such agreement relating to any field or pool located within any state in which there is a duly established regulatory commission or agency charged with the duty of conserving oil and gas and preventing the waste thereof, the board is directed to consider such agreement jointly with such commission or agency, or representatives thereof, before granting approval to such agreement.

Determinations of Fact

Sec. 6. After fair and impartial consideration of pertinent information submitted by any commission, officer or other agency established under state law for the purpose of conserving oil and gas and preventing the physical waste thereof in any state, the systematic analysis of appropriate statistical data, and consultation with such sources of information within the petroleum industry as it may deem necessary, the board shall determine periodically, within such limit as is consistent with the prevention of physical waste, the following facts: (1) the reasonable market demand for petroleum in the United States; (2) that part of such demand which constitutes the reasonable market demand for petroleum from each producing state, specifically determining the quantity required from current production to supply such demand from each producing state. The board shall inform any duly constituted state authority charged under state law with the duty of regulating or restricting the production of petroleum of its said determinations and shall also give public notice of said determinations.

In any state in which there is no state authority authorized to regulate or restrict production of petroleum or in which no such authority does regulate or restrict production the board or agency designated by it is authorized to and shall, if found by it necessary in order to effectuate the purposes of this act to prevent waste and to protect interstate or foreign commerce, determine in accordance with the provisions of this section the reasonable market demand for crude petroleum from any pool, field, lease, property, storage, well or other source of supply in such state, and to give notice of such determinations under rules and regulations prescribed by the board; provided that such determinations shall be based on an equitable and ratable taking by each producer from a common source of supply and provided further that in such determinations there shall be no unreasonable discrimination in favor of any one such common source of supply as against another.

Quotas to Protect Interstate Commerce and Prevent Waste When Found Necessary Because of Excess Production

Sec. 7. When and only when the production of crude petroleum in any state exceeds the reasonable market demand therefor, as determined under this act, and the board after hearing expressly finds that such excess supply or production directly and injuriously affects commerce among the several states or with foreign nations, and causes waste, the board shall prescribe quotas of crude petroleum for movement in commerce in such manner and to such extent as will limit the movements of petroleum in commerce to the reasonable market demand as determined by the board, but shall limit its quotas proscribed hereunder to such particular areas or particular sources of supply as it finds necessary in fairly accomplishing the purposes of this act to balance supply with demand and to prevent waste.

Amendment of Act of February 22, 1935, and Co-ordination of It With This Act

Sec. 8. The act entitled "An act to regulate interstate and foreign commerce in petroleum and its products by prohibiting the shipment in such commerce of petroleum and its products produced in violation of state law, and for other purposes," approved February 22, 1935 (Public No. 14, 74th Congress), is hereby amended by striking out Section 13 thereof providing that said act shall cease to be in effect on June 16, 1937.

All functions vested in the President by Sections 5, 7, 9 and 10 of the act of February 22, 1935, shall hereafter be vested in the board; provided that all orders, rules and regulations heretofore approved by the President or agency designated by him under said act shall remain in full force and effect unless and until amended or revoked under the terms of said act of February 22, 1935, as amended. Any petroleum or any constituent part thereof moved or to be moved in commerce in violation of the provisions of this act including any quota prescribed pursuant to Section 7, shall be considered "contraband oil" and subject to the provisions of the said act of February 22, 1935, relating to "contraband oil."

Imports

Sec. 9. The importation of petroleum and its products, including natural asphalt, is hereby limited as hereinafter provided to such quantities as will prevent imports of petroleum and its products, including natural asphalt, from so interfering with current domestic production by supplying an undue proportion of domestic, consumptive and export demand for petroleum and its products, including natural asphalt, as to directly and injuriously affect commerce in petroleum among the several states and with foreign nations and cause waste of petroleum.

The four quarters of the calendar year shall be reckoning periods. To the end of 1940, or until such time as the total domestic production plus the percentage of such reasonable market demand hereinafter allowed to imports, shall be insufficient to supply the reasonable market demand, the allowed rate of imports of crude petroleum and the products of crude petroleum, all combined, and including natural asphalt, in barrels total for any reckoning period of three calendar months, shall be 13.50 per centum of the quantity of crude petroleum, determined under Section 6 to be the rea-

sonable market demand from the United States during the first month of such reckoning period. Crude petroleum or products thereof imported and supplied to vessels at American ports shall be deemed imports, excepting bunker fuel oil for foreign vessels engaged in foreign trade.

In advance of each reckoning period the board shall hold a hearing, consider applications for quotas, make fair and equitable allocations, and establish within the limits herein fixed, just and reasonable quotas of crude petroleum and the various products thereof, including natural asphalt, for persons desiring to import the same during the period, in proportion to their proven trade or manufacturing demand for such imports, over and above their customary and available domestic supply, if any.

Quotas of particular products shall not be allowed to such extent as will, on the whole, increase the normal importation ratios of such products to the aggregate of crude and other products imported, except when the board finds a shortage in the domestic supply of such particular products, and should the allowed ratio of crude petroleum, fuel oil, gas oil, paraffin and asphalt, in aggregate barrels, to all other products of petroleum allowed to be imported, fall below the average ratio which prevailed in the last six months of 1932, each barrel excess of such other products having a boiling point below 400° F. shall be deemed equivalent of 3 bbls. for the purpose of computing total allowable imports. Should the allowable crude oil production for the United States for any quarter be larger or smaller proportionately than that amount fixed for the first month of any quarter or should there be an average or shortage of actual imports in comparison with the allowable imports in a quarter, as determined on above basis, such differences shall be adjusted up or down in subsequent quarters, and the final ratio of imports to such demand for consumption in the United States and the demand for export from the United States, reduced to a monthly basis, in each instance shall be 4.50 per centum to the end of 1940 or until otherwise ordered as provided in this section. Nothing herein stated shall prevent the importation of products with a boiling point above 400° F. or crude oil in different ratios to the aggregate than those which prevailed in the last six months of 1932.

Whenever the total domestic production of crude petroleum and the products of crude petroleum plus that percentage of the reasonable market demand which is herein allowed to imports into this country, shall be insufficient to meet the reasonable market demand without unduly depleting domestic reserves, then the board is directed to increase such proportion allowed to imports to an amount sufficient to supply such deficiency, upon the basis of findings made after proper hearings are held.

The board shall adopt and promulgate appropriate rules and regulations to permit imports in bond for export, including manufacture in bond and including oil imported under a drawback application coupled with export of resultant products, and such imports shall not be charged against import quotas or included in the computations under Section 6.

When quotas are in effect under this section it shall be unlawful for any person, except as otherwise herein provided, to import into the United States crude petroleum or any product thereof in excess of his quota or without having been assigned a quota under this section.

No tariff, duty or excise tax now in force shall be affected by the provisions of this act.

Court Review

Sec. 10. Any person aggrieved by an order issued by the board in a proceeding under this title to which such person is a party may obtain a review of such order in the Circuit Court of Appeals of the United States, within any circuit wherein such person resides or has his principal place of business, or in the Court of Appeals of the District of Columbia, by filing in such court, within 60 days after the entry of such order, a written petition praying that the order of the board be modified or set aside in whole or in part. A copy of such petition shall be forthwith served upon any member of the board, and thereupon the board shall certify and file in the court a transcript of the record upon which the order complained of was entered. Upon the filing of such transcript such court shall have exclusive jurisdiction to affirm, modify, and enforce or set aside such order, in whole or in part. No objection to the order of the board shall be considered by the court unless such objection shall have been urged before the board. The finding of the board as to the facts, if supported by substantial evidence, shall be conclusive. If either party shall apply to the court for leave to adduce additional evidence, and shall show to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for failure to adduce such evidence in the hearing before the board, the court may order such additional evidence to be taken before the board and to be adduced upon the hearing in such manner and upon such terms and conditions as to the court may seem proper. The board may modify its findings as to facts, by reason of the additional evidence so taken, and it shall file such modified or new findings, which, if supported by substantial evidence, shall be conclusive, and its recommendations, if any, for the modification or setting aside of the original order. The judgment and decree of the court, affirming, modifying, and enforcing or setting aside, in whole or in part, any such order of the board, shall be final, subject to review by the Supreme Court of the United States upon certiorari or certification as provided in Sections 239 and 240 of the Judicial Code, as amended (U.S.C. title 28, Secs. 346 and 347).

Sec. 11. If any person fails or neglects to obey any order, rule or regulation of the board while the same is in effect, the board or the United States by its Attorney General may apply to an appropriate district court of the United States for the enforcement of such order, rule, or regulation. The court shall enforce obedience to such order, rule or regulation by a writ of injunction or other proper process, mandatory or otherwise.

Penalties

Sec. 12. Any person who shall violate any provision of this act or any order, rule or regulation issued or promulgated or quota prescribed pursuant to this act shall be guilty of an offense and upon conviction thereof in any court of the United States of competent jurisdiction shall be punished by a fine not to exceed $2,000, or by imprisonment for not longer than six months, or by both such fine and imprisonment, and each day such violation continues shall be deemed a separate offense.

Voluntary Industrial Agreements

Sec. 13. The Petroleum Advisory Committee shall be authorized to assist in the formulation of voluntary agreements between members of the industry whereby nonintegrated or semi-integrated producers, refiners and marketers may compete in their operations on a fair basis with the producing, refining and marketing units of integrated organizations in the oil industry or whereby such nonintegrated or semi-integrated producers, refiners and marketers may be assured fair access to markets. To this end it may provide for the holding of meetings and conferences of members of the industry. Each such agreement shall be valid and effective when the board finds that such agreement will accomplish the purposes herein stated, and approves said agreement. The board shall withdraw its approval of such agreement whenever it finds that such agreement or operations thereunder fails to accomplish the purposes herein stated. Each such agreement shall contain a provision for the payment of adequate minimum wages to employes and the maintenance of fair maximum hours of labor for employes. Such minimum wages shall in no case be less than the respective scale in effect June 15, 1935.

Separability of Provisions

Sec. 14. If any provision of this act or any clause, sentence or part hereof be held unconstitutional or invalid for any reason, or the applicability thereof to any person, circumstance, commodity or class of transactions with respect to any commodity be held invalid, the validity of the remainder of the act and the applicability of such provisions to other persons, circumstances, commodities and classes of transactions shall not be affected thereby.

Definitions

Sec. 15. The words defined in this section shall have the following meaning when found in this act, to wit:

"Reasonable market demand" means the amount of petroleum, minus proper adjustments for imports and reasonable seasonal withdrawals from storage, required to be produced to meet the current consumptive demand for petroleum and petroleum products, plus proper adjustments for exports (exclusive of exports from import in bond) and reasonable seasonal additions to storage.

Chairman Arnott Sees No Occasion for Rushing Code of Ethics Revision

WASHINGTON, D. C., June 17.—Well satisfied with the progress of the refining and marketing branch of the oil industry since the invalidation of codes by the Supreme Court's decision, C. E. Arnott, chairman of the marketing subcommittee of the Planning and Coordination Committee, sees no immediate reason for rushing through the program of revising the Federal Trade Commission Code of Ethics.

The first meeting to discuss the subject has been set for June 24 here, at which time Mr. Arnott stated the members of the committee will sit around the table and "think out loud." Nothing definite has been decided for the consideration of the meeting, but it is expected the revisions previously drawn by members of the committee's staff, and intended to be included in the general oil code under NRA will be carefully gone over by the members.

Mr. Arnott was very much gratified at the manner in which the oil industry, both integrated and non-integrated companies, had been continuing to operate under the terms of the oil code. Despite numerous rumors which have been brought to his attention since the court's decision, Mr. Arnott stated investigation of these rumors disclosed they were groundless.

Mr. Arnott's announcement of the meeting of the Marketing Committee came almost simultaneously with the passing of a resolution by the Planning and Coordiation Committee that the organization be continued as a de facto committee until July 21, this being the earliest date possible for the committee to leave its rented quarters here.

The personnel of the committee's staff will, in the meantime, be greatly curtailed, the expectation being that the approximately 65 members of the staff will be cut to about 30 or 35 before the date mentioned. In the event of the passage of the Thomas bill, or any other legislation which would necessitate the continuance of an industry committee, the nucleus will still be left and the loose ends picked up without any loss of time.

The Planning and Coordination Committee adopted the following resolution:

Whereas, the code of fair competition for the petroleum industry, under the National Industrial Recovery Act, expires on June 16, 1935, at which time the functions of this committee will cease, and

Whereas, in view of the gains to the petroleum industry accomplished under the code and the existing organization of the industry, national, regional, state and local, numerous requests have come to the committee from the industry that this organization be not disbanded at this time, but that it be held intact for such future service to the industry as may be possible, and

Whereas, a reasonable period will be required for the liquidation and disposition of the committees assets and winding up of its affairs, and

Whereas, in the present uncertainty as to federal legislation, it is expedient to preserve the formal organization of the industry which has been built up under this committee.

Now, therefore, be it resolved:

First. That this committee continue as a de facto or informal committee, and that the officers of the present committee continue as oficers of the de facto committee.

Second. That the various subcommittees of this committee, national, regional, state and local, be appointed de facto or informal subcommittees and be notified of the action herein taken and requested to maintain the framework of their organizations until further notice.

Third. That the officers of this committee be authorized, if they deem it advisable, to take steps to cancel the lease or leases on building space in Washington, effective July 21, 1935, and arrange for storage of the records of this committee in Washington for a period of three years from the last mentioned date and for their destruction at the end of said period, and also to dispose of the assets of this committee.

Fourth. That the treasurer is hereby authorized to pay in advance for the storage of the records of this committee for a period of three years and for the destruction thereof at the end of such period.

Fifth. That the treasurer in addition to the expenditures heretofore authorized is hereby authorized to pay all expenses in connection with the liquidation and winding up of this committee's affairs and carrying out of the purposes of this resolution and that any unexpended funds of this committee remaining in the hands of the treasurer, after all payments have been made by him as authorized by this committee, be disposed of by him in accordance with the terms of his solicitation of contributions in his letter of January 26, 1935.

Chicago Area Gasoline Price Continues Firm

(Continued from Page 33)

to-mouth basis. Gas oil is holding its own.

Lubricants

Lubricants have been looking a little better with prices firmer and the volume slightly improved. Buyers are still conservative in placing orders.

Wax

Wax is holding its own as to prices, but little else. The volume is not very encouraging, and inquiries show little change indicated. Stocks remain quite substantial.

Naphthas

A firm position is still reported in most grades of naphthas and solvents, notwithstanding continued competition from lower priced Michigan material. Ruling quotations are unchanged.

Coke

Coke is quiet, but there has been a fair amount of buying considering the season. Prices are holding about unchanged in most cases.

Increasing Development in New Plymouth Field; Much Activity in Pearsall Field, Frio County

SAN ANTONIO, Tex., June 17.—While heavy rains throughout the Southwest Texas district held up developments considerably, the outstanding feature was the increasing development in the new Plymouth Field in San Patricio County. Since the completion of Heep Oil Corp.'s No. 1-E Welder, three-quarters of a mile southwest of the discovery, 14 locations have been planned for immediate drilling. Although actual feet measurements have not been announced, Heep Oil Corp. and Plymouth Oil Co. each are reported to have made four tentative locations, Sun Oil Co. is reported to have made two locations and Tom Graham and Walter Hillegeist have made tentative location for a test.

Two More Tests

Considerable trading has been going on in the field, which has resulted in the announcement of two tests to be drilled by independent operators. Benson and Johnes have leased 100 acres out of the Welder ranch in Section 38, and have made location for No. 1 Welder, 2,333 feet from the south line and 466 feet from the east line of the section, which places it 5,280 feet west and 2,375 feet south of Heep Oil Corp.'s No. 1-E Welder. In Section 47, Violet Oil Co. leased 200 acres of the Welder ranch and have staked its No. 1 Welder, 466 feet from the north line and 1,399 feet from the west line of the section. It is 3,414 feet west and 5,280 feet south of Heep Oil Corp.'s No. 1-E Welder. While the consideration was not announced for these leases, it is reported all payments are to be made out of oil. Magnolia Petroleum Co. is rigged up and ready to spud No. 1 Corpus Christi Bank & Trust Co., 3,500 feet south. South and west of Heep Oil Corp.'s No. 1-E Welder, the company has made locations for two tests, 933 feet in each direction from the well. The company also purchased additional acreage totaling 246 acres which gives it all of the acreage in Section 46, on which its producer is located.

One more producer was added to the field by the completion of Plymouth Oil Co.'s No. 3-C Welder, 1,200 feet northeast of the discovery. Bottomed in oil sand at 5,501 feet, it was completed through perforated casing from 5,486-5,501 feet for an initial production of 288 bbls. per day through a three-eighths inch choke. Approximately 1,320 feet east of the discovery, the company's No. 2-C Welder was tested through perforated casing from 5,626-31 feet and showed for a large gas well, registering 1,800 pounds on the tubing. Since there is no gas producer in the field, it is likely the well will be completed for a gas well and the fuel used to supply the other tests.

North of the town of Sinton, Plymouth Oil Co. was preparing to make a drill stem test on No. 1-D Welder in sand from 5,873-75 feet. In the same area, Heep Oil Corp.'s No. 1-D Welder is drilling below 5,920 feet.

Laredo

In the Laredo district, another producing area looms at the wildcat of Mills Bennett Production Co.'s No. 1 Lopez in Survey 73, eastern Webb County. After the well had tested dry gas in a sand from 1,265-73 feet, which showed no pressure, the Mirando sand was encountered from 2,121-26 feet, and showed for a gas well estimated from 25,000,000 to 30,000,000 feet per day. The sand showed a strong oil odor and the test was coring deeper in hope of picking up oil production. The test is on a 6,000-acre tract of G. G. Mortimer who gave the company about 1,800 acres checkerboarded over the tract to drill the test. Two wells have been drilled east of the present test.

Angelita

In the same county, but in the Angelita Field, Continental Oil Co.'s No. 3 Welder, northeast of the discovery well in the Juan Hart and Sons Survey, is drilling below 4,330 feet in shale. Since several failures have been completed in the field, this is the first activity in several months. Drilling operations on the test may now be held up, due to the fact the discovery which is supplying fuel stopped flowing during the week, when the well was killed by salt water that came in when the gas pull on the well became too heavy.

Pearsall

Four miles southwest of production in the Pearsall Field, Frio County, Amerada Petroleum Corp.'s No. 1 Smith is drilling below 5,100 feet. Same company's No. 1 Kothmann, one-half mile south of production, is drilling below 200 feet. One mile south of Pearsall, Midland Oil Co. has moved in rig for No. 1 Joint Stock Land Bank in the B.S.&F. Survey No. 2, 300 feet from the northeast and southeast lines of the Joint Stock Land Bank 60-acre tract, and about 400 feet from the northeast line and a quarter of a mile from the northwest line of the survey.

Since the completion of several good producers in the Pearsall Field, considerable leasing and trading has taken place, and much activity is scheduled to get under way. In Dimmitt County, adjoining on the southeast, three wildcat tests are scheduled to be drilled. Joe Lundin has made location for No. 1 Nueces Land & Irrigation, in the NE cor. of Lot 16, Block 7, Bermuda Land Subdivision, south of the town of Brundage. It is to be drilled to the Navarro formation which has production in the Pearsall Field. Northwest of Carrizo Springs, H. H. Weinert has a 12,000-acre block and spreads are now being sold for drilling a test. Southeast of Carrizo Springs approximately 15,000 acres has been assembled by De Golyer, who has announced his intentions to drill in the near future.

Live Oak County

Along the "Jackson trend" in Live Oak County, Feltner, Lefevre & Spice's No. 1 Carter Investment Co. in the southwest part of the county is reported coring for the Government Wells sand below 3,100 feet. It is in the Hooper and Wade Survey. The top of the Jackson was reported to have been 2,359 feet and the Hockleyensis at 2,780 feet. In the northwestern part of the county, another wildcat was announced by Ray Nixon for his No. 1 Chamberlain, 330 feet from the east line and 950 feet from the north line of Section 107 of the William Hill Survey. J. O. Whittington's No. 1 Little in the M. M. Shipp Survey is shut down at 5,759 feet after it was tested through perforated casing and showed a small amount of oil and 300 pounds of shut-in gas pressure. It is reported another test will be drilled within 90 days.

Bee County

Two miles southwest of the Normana Field, and 8 miles north of Beeville, in Bee County, Dirks Brothers and others have apparently opened their fourth discovery within recent months, due to the showing of their No. 1 Hicks in Block 45 of the Uranga Grant Survey. Bottomed in the Pettus sand at 3,630 feet, the well came in for a gas well spraying a small amount of high gravity oil with tubing pressure 220 pounds and casing pressure 250 pounds. Five miles south of Dirks Brothers' No. 1 Foley, a gas well in the C. Rivas Survey, Mills Bennett and others' No. 1 Miller is drilling below 2,635 feet. There are six other tests drilling or preparing to drill throughout the county.

Sam Fordyce

The prospect of a deeper sand being proven productive in the Sam Fordyce Field in Hidalgo County will probably be known during the week when a production test is made on K. D. Harrison and Double D. Oil Co.'s No. 2 Mrs. Lula George, on the extreme eastern side, in Tract 13, Porcion 41. The regular gas sand was cored from 2,711-36 feet and the regular Frio sand saturation from 2,736-91 feet, the thickest sand section yet to be cored in the field. The test was then cored to 2,935 feet, and although a few inches of sand were recovered, the showing was sufficient to cause the operators to cement 7-inch casing at 2,924 feet for a production test. The sand is believed to be the middle section of the Frio formation, and the outcome is expected to create much drilling on this side of the field.

Since the completion of Union Sulphur Co.'s deep test in the Mercedes Pool, wildcatting in Hidalgo County has been increasing steadily. Turnbull-Irwin and others have made location for a 6,000-foot test to be drilled on the John H. Shary lease, and drilling is scheduled to get under way by the first of July. It is 4 miles east of Mission in Tract 21, Shary Subdivision, Porcion 58, Jurisdiction of Reynosa. Three miles southwest of Mission, Bluff Petroleum Co.'s No. 1 Porcion Land Co. in Share 14, Porcion 49, Jurisdiction of Reynosa, is drilling below 1,530 feet. It is contracted to be drilled to 6,000 feet and several major companies are reported to have purchased spreads around the test.

Wildcat Operations in Southwest Texas

Week Ending June 15

BANDERA COUNTY

Miiam Drlg. Co.'s (Plateau Oil Co.) No. 1 Garrison, G.C.&S.F. Sur. No. 506, 1,500 ft. from W and 2,970 ft. from N lines of survey.
Standing 3,469 ft.; changing contractors and rigs.

Palm Winn Oil Co.'s No. 1 Watson, Sur. No. 71 (workover).
T.D. 1,760 ft.; reaming.

BASTROP COUNTY

Malone & Owens' No. 1 Spooner, 500 ft. from N line, 3,550 ft. from SW line of Leverens Sur.
Lime 2,158-68 ft.; no report.

BEE COUNTY

Dirks' (Bennett & Calloway) No. 1 Miller, 330 ft. from E line, 937 ft. from N line of 6.74-ac. tract, C. Rivas Sur.
Drlg. 2,000 ft.

Dirks Bros. and McMurry's No. 1 Johnson, 1,050 ft. S line, 150 ft. E line of tract, Uranga grant.
Rigging up.

Dirks Bros. et al's (Daugherty et al) No. 1 Hicks, N 70 deg. 40 ft. W 975 ft. from E line, N 19 deg. 33 ft. E 1,361 ft. from S line, NW cor. Blk. 45, Uranga grant.
T.D. 3,945 ft.; comp. at 3,630 ft. as a gasser spraying small amount of oil; T.P. 220 lbs.; C.P. 250 lbs.

Firm Oil Co.'s No. 1 Copeland, 1,650 ft. from N line, 330 ft. from E line of lease. B. O. Hadley Sur.
Drlg. 1,100 ft.

G. M. Church's No. 1 J. C. Woods, 330 ft. from N line, 330 ft. W of road, J. Ryan Sur.
Moving in material; S.D.

Humble O. & R. Co.'s No. 1 Wood, 466 ft. out of SE cor. of 3,000-ac. tract, Wm. Burke Sur.
Drlg. 1,192 ft.

Humble O. & R. Co.'s No. 2 Thompson, 466 ft. SW of SE cor. of J. C. Wood tract, 466 ft. SW on line parallel to E line, Wm. Burke Sur.
T.D. 5,980 ft.; milling out bit.

Francis P. Hynes' No. 1 Theo. M. Plummer, 330 ft. from W line, 990 ft. from S line of Sec. 33, Theo. M. Plummer Subd. Abd. 1,550 ft.

F. P. Hynes' No. 2 Plummer, F. J. Chessman Sur. 1, 40 ft. W of No. 1.
Moving rig.

BEXAR COUNTY

Cherokee Drlg. Co.'s No. 1 Chapman, 2,100 ft. from S line, 3,200 ft. from E line, A. J. Leslie Sur.
S.D. 400 ft.

Jas. B. Cunningham's No. 1 L. F. Ridder 950 ft. S of Nelson Road, 1,300 ft. from E line, Block 5,196, Sur. No. 58.
Sand 485-519 ft.; putting on rotary.

Jones & Kieffer's No. 1 LaGrane, NW cor. of tract, 310 ft. each way, F. Rolen Sur. No. 48.
T.D. 1,010 ft.; T.A.

McPhee & Briggs' No. 1 F. Lamb, 9,200 ft. from S line, 800 ft. from W line of Sur. No. 3 (Manuel de Luna).
Shale 2,135 ft.; whipstocking and sidetracking.

Mid-Texas Prod. Co.'s No. 1 C. G. Walker, cor. of Lot 21, 1½ miles E of Shadowland.
Rigging up.

Thelma O. & G. Co.'s (Noble & Akins) No. 1 DeVilbiss.
T.D. in Taylor 2,238 ft.; showing oil; trying to complete.

Carroll C. Raborn's No. 1 Claude McCauley, 150 ft. from N and NW lines of tract in Sec. 52, Wm. Harrison Sur.
Sand showing some oil 650 ft.; no report.

(Continued on Page 46)

ROCKY MOUNTAIN RUNS

Estimated daily average crude oil production for the week ending June 15 follows:

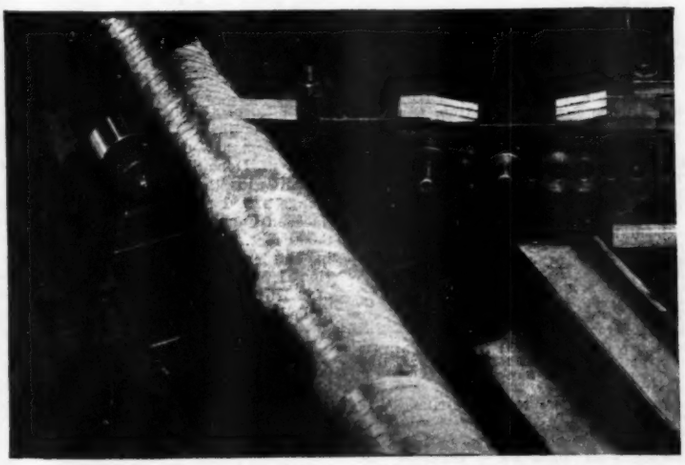
	Bbls.
WYOMING	
Salt Creek	17,350
Big Muddy	1,650
Badger Basin	80
Black Mountain	250
Byron	1,220
Dallas Derby	610
Dutton Creek	70
Elk Basin	40
Ferris	20
Frannie	440
Garland	830
Grass Creek	1,810
Greybull	10
Hamilton Dome	2,000
Hudson	240
LaBarge	1,290
Lance Creek	2,650
Lost Soldier	1,250
Mule Creek	shut in
Midway	70
Notches	shut in
Oregon Basin	2,900
Osage	740
Pilot Butte	30
Rex Lake	shut in
Rock River	1,420
South Casper	shut in
Poison Spider	230
Teapot	20
Waugh Dome	600
Total Wyoming	37,920
MONTANA	
Buckley-Border	260
Cat Creek	780
Cut Bank	4,900
Dry Creek	shut in
Kevin-Sunburst	3,300
Lake Basin	50
Pondera	940
Total Montana	10,230
COLORADO	
Florence	240
Fort Collins and Wellington	390
Iles Dome	2,670
Moffat	390
Orchard	80
Rangely	70
Tow Creek	190
Total Colorado	4,020
NEW MEXICO	
Artesia	590
Cooper area	5,490
Eunice area	7,640
Hobbs	31,610
Hogback	150
Hospah	shut in
Jal	4,090
Lea area	1,390
Maljamar	1,600
Rattlesnake	730
Table Mesa	80
Total New Mexico	53,370
Total Rocky Mountain region	105,540

10,000 LBS!!

without Bursting this New Hose . . .

IN establishing a new high in test burst pressures for Rotary Hose, Thermoid announces to the industry a new Super High Pressure hose that has withstood the tremendous hydrostatic test pressure of 10,000 lbs./sq. in. without rupturing. This extreme high test pressure is only available in the new 1935 special series of Thermoid Rotary Hose.

It is of interest to note that this test was made in an independent laboratory and that no actual burst pressure was obtained due to the fact that in recording 10,000 lbs., the full capacity of the testing equipment had been reached.



A view of the Thermoid Rotary Hose Wire Winder in operation. This machine applies wire with the precision accuracy of a thread-cutting lathe.

As with the standard Thermoid grades, the remarkable strength of this new Rotary Hose is very largely due to the precision and uniform application of the wire. And this precision winding has been made possible by a special Wire Winder—a machine designed and built by Thermoid engineers that operates with the same accuracy as a thread-cutting lathe.

In building this new hose, Thermoid has made several important improvements in the manufacturing process including super-refinements in wire-winding—all of which have contributed materially to its pressure-resisting qualities.

OIL WELL SUPPLY COMPANY

Branch Stores in all Oil Fields

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Drilling and Pumping Belts — Brake Linings and Brake Blocks — Rotary Hose — Air, Steam, Welding and Refinery Hose — Packings.

Goldsmith Ranch Test, Ector County, Increases to 85 Barrels an Hour in Three-Hour Test

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., June 17.—The recent discovery well of Gulf Production Co. on the Goldsmith ranch, Section 10, Block 44, Township 1s, T.&P. Survey, Ector County, which made an initial production of 891 bbls. per day through casing at total depth of 4,172 feet, only 2 feet in the lime pay, was deepened 5 feet this week and proved beyond doubt the best potential producer in the entire county. It made 75 bbls. per hour, increasing to 85 bbls. per hour the last hour on a three-hour open flow test through casing. The company is preparing to run tubing and Gulf Pipe Line Co. is laying 17 miles of 6-inch line to connect with its line in the Penn Field to the south.

Phillips Petroleum Co. is drilling two important tests southeast of the discovery, on Pure Oil Co. acreage. One test is in Section 14 and one in Section 23, in the same block and survey as the discovery. If producers they will prove a field at least 3 miles to the southeast.

Landreth Production Co.'s No. 1 Cowden heirs, Section 18, Block 44, Township 1n, T.&P. Survey, about midway between the two wildcat producers, Davidson's No. 1 Cummins in Section 10, Block 45, to the west, and Landreth and others' No. 1 Scharbauer, in Section 20, Block 44, to the southeast, does not look encouraging at this writing due to sulphur water showing at 4,450 feet and orders being given to shut down at 4,470 feet. It showed 1,000,000 feet of gas at 4,166 feet, but oil showings were lacking.

Landreth Production Co.'s No. 1 Blakeney, in the NE cor. Section 22, Block 44, Township 1n, T.&P. Survey, is drilling below 200 feet, 1½ miles east of the company's small discovery well on the Scharbauer ranch in Section 20. It is also about 1 mile northwest of a dry hole drilled by the late R. R. Penn and others, in Section 27, which went to 4,390 feet before plugging.

Andrews County

Gulf Production Co. has staked a wildcat in Section 2, Block A-38, P.S.L. Survey, on the J. S. Kelly lands, in the northwest part of Andrews County, about 4 miles west of a test recently abandoned by Stogner and others in Section 3, Block A-37, at total depth of 4,801 feet. Gulf has a large block surrounding its location which is forced by lease expiration.

Fisher County Wildcat

Merry Bros. and Perini, who in conjunction with the Tide Water Oil Co. recently opened a productive area about 6 miles northeast of Rotan, Fisher County, are planning another wildcat, probably on the H. Newman lands to go to 3,800 feet. The operators have assembled approximately 5,000 acres about 5 miles southeast of Roby and 18 miles southwest of the Royston Pool.

Winkler County

Gulf Production Co.'s No. 2 Keystone Cattle Co., in Section 17, Block B-2, P.S.L. Survey, deepest of nine wildcats being drilled on the company's large block, logged 6 or 7 feet of porosity and made a drill stem test from 3,075-3,140 feet. There was no showing of oil, only gas. It is coring. The company's No. 1 Keystone, 2½ miles north of No. 2, had a gas blowout at 2,720-25 feet and is preparing to kill the gas. There seems to be plenty of gas in this area. Sid Richardson's No. 1 Walton, north of No. 1 Keystone, in Section 1, Block B-3, having encountered trouble with heavy gas pressure causing loading of hole before drilling could be resumed. It is coring below 2,955 feet.

This is one of the most interesting areas in the district, 10 wildcats being drilled on as many sections and within 4 miles southeast to northwest. The sector is in the eastern part of the county and remote from production.

Crane County

Gulf Production Co.'s No. 1 McKnight, 4 miles north of the lone producer on the Tubbs ranch in western Crane County, was making 2½ bbls. of oil per hour last week while drilling at 3,230 feet. It is drilling below 3,470 feet in lime without any change in the quantity of oil. Location is in Section 9, Block B-21.

World's Deepest Test

Gulf Production Co. is still treating No. 103 McElroy, in Section 197, Block F, western Upton County Ordovician test, no results having been obtained since plugging back from total depth of 12,786 feet to 9,977 feet, where it is now bottomed. If it does not make a commercial producer after acidizing, it will be plugged back farther and higher formations given treatment before plugging back to the Permian lime, from which it is almost positive of making a producer. It is among Permian lime wells on the McElroy ranch and picked up good oil showings when that formation was drilled through a couple of years ago.

Out of the 21 locations staked this week only four were for wildcats. Twin Oil Co. is to drill a wildcat in Section 2, Block A-38, Tom Green County, and a couple were listed for Jones County. There were only 10 wells completed in the entire district, all producers.

Wildcat Operations in West Texas

Week Ended June 15

ANDREWS COUNTY

Fuhrman Pet. Corp.'s No. 2 Ford, 440 ft. from S and 1,320 ft. from E, Sec. 16, Blk. A-43.
T.D. 4,012 ft.; U.R. csg.

Gulf Prod. Co.'s No. 1 J. S. Kelly, 1,320 ft. from S and E. Sec. 2, Blk. A-38.
Location.

Honolulu & Llano Oil Co.'s No. 1-B Parker, 440 ft. from N and 1,650 ft. from E, Sec. 11, Blk. A-42.
Elev. 3,281 ft.; drlg. 4,444 ft.

Humble Oil & Ref. Co.'s No. 4 Means, 1,982 ft. from N and 660 ft. from E, Sec. 12, Blk. A-35.
Rigged up.

Humble Oil & Ref. Co.'s No. 4 Means, 654 ft. from S and 1,997 ft. from W, Sec. 4, Blk. C-45.
Elev. 3,185 ft.; T.D. 4,035 ft.; ran csg.

Republic Prod. Co.'s No. 1 Boner-State, 2,200 ft. from S and 1,320 ft. from E, Sec. 25, Blk. A-43.
Drlg. 3,375 ft.

L. G. Stogner et al's No. 1 Mrs. C. George, 660 ft. from S and E, Sec. 25, Blk. A-22, P.S.L. Sur.
Cable tools.

J. W. Tripplehorn's No. 1 Ogden, 330 ft. from S and 2,310 ft. from W lines of Sec. 6, Blk. A-46, P.S.L. Sur.
Elev. 3,211 ft.; T.D. 1,645 ft.; standardizing.

Wahlenmaier et al's No. 1 Odessa Ranch Co., 1,320 ft. from N and E of Sec. 10, Blk. A-32, P.S.L. Sur.
Elev. 3,307 ft.; drlg. 3,856 ft.

Wahlenmaier et al's No. 1 Cox Estate, 1,320 ft. from N and W of Sec. 8, Blk. A-33.
Rotary rig; rigged up.

BREWSTER COUNTY

F. C. Dodson's No. 1 Texas American Syndicate, 660 ft. from N and E, Sec. 66, Blk. 10, G.H.&S.A. Sur.
Elev. 4,228 ft.; S.D. 950 ft.; rigged up rotary.

Joiner et al's No. 1 McIntyre, 353 ft. from S, 2,390 ft. from E of Sec. 21, Blk. 352, W. M. Mitchell Sur.
S.D. 2,150 ft.

King & Franklin's No. 1 Gage Est., C Sec. 138, Blk. 22, G.H.&S.A. Sur.
Elev. 4,244 ft.; S.D. 1,185 ft.

G. H. Storey's No. 1 Wilson, 1,980 ft. from N and E lines of Sec. 3, Blk. 212, T.&St.L. Sur.
Elev. 3,609 ft.; drlg. 1,578 ft.

S. G. Smith's No. 1 Decie, 2,490 ft. from S and E. Sec. 7, Blk. 1.
Elev. 4,271 ft.; drlg. 1,046 ft.

COCHRAN COUNTY

Kelsey's No. 1 Slaughter, C Labour 36, League 150, R.C.S. Lands.
Derrick.

West Texas Development Co.'s No. 1 Slaughter, near C of Labour 53, League 149, Randall Co. School Lands.
Derrick.

COKE COUNTY

Haggerty et al's No. 1 Gaston, 340 ft. from S and 654 ft. from W, Sec. 11, Jos. Young Sur.
Drlg. 3,957 ft.

CRANE COUNTY

Cranfill Bros.' No. 1 Tubbs, 330 ft. from S and W of Sec. 11, Blk. B-27, P.S.L. Sur.
Elev. 2,536 ft.; drlg. 3,303 ft.

Dobbs Oil Co.'s No. 1 J. Cowden et al, 330 ft. from S and E of N half, Sec. 38, Blk. 1, H.&T.C. Sur.
Drlg. 162 ft.

Gulf Prod. Co.'s No. 10 Waddell, C NW ¼ Sec. 11, Blk. B-28.
Drlg. 1,000 ft.

Gulf Prod. Co.'s No. 1 Henderson, 1,313 ft. from S and 1,322 ft. from E, Sec. 3, Blk. B-23, P.S.L. Sur.
Elev. 2,778 ft.; S.D. 2,131 ft.

Gulf Prod. Co.'s No. 1 M. B. McKnight, 660 ft. from S and W, Sec. 9, Blk. B-21.
Elev. 2,679 ft.; drlg. 3,367 ft.; increase in oil, 29.5 gravity.

Gulf Prod. Co.'s No. 1 Waddell, C NW NW Sec. 4, Blk. B-27, P.S.L. Sur.
S.D. 4,595 ft.

H. L. Holloway's No. 1 Mayberry, 2,440 ft. from SW and SE, Sec. 17, Blk. 35, H.&T.C. Sur.
Hole caving 351 ft.

Magnolia Pet. Co.'s No. 1 Edwards, 330 ft. from S and 1,650 ft. from E, Sec. 2, Blk. B-23.
Elev. 2,778 ft.; drlg. 2,775 ft.

CROCKETT COUNTY

Adkins Bros.' No. 1 Shannon, 320 ft. from S and 630 ft. from W of 80 in SW ¼ Sec. 27, Blk. WX, G.C.&S.F. Sur.
Location.

Leslie-Hiller et al's No. 1 Todd, 1,200 ft. N and 330 ft. E, Sec. 26, Blk. WX, G.C.&S.F. Sur.
Fishing 715 ft.

Humble Oil & Ref. Co.'s No. 1 Couch, C NW Sec. 3, Blk. QR, G.C.&S.F. Sur.
Temporarily abnd. 1,581 ft.; elev. 2,538 ft.

CULBERSON COUNTY

Anderson-Prichard Oil Corp., Magnolia Pet. Co. et al's No. 1 Borders, 1,255 ft. N and 2,305 ft. from W, Sec. 34, Blk. 69, P.S.L. Sur.
P.B. to 1,664 ft. to straighten hole.

Miller Bros.' No. 1 fee, 1,900 ft. from N and 660 ft. from E line of Sec. 21, Blk. 97, P.S.L. Sur.
S.D. 2,137 ft.

DAWSON COUNTY

Adams & Turner's No. 1 John Robinson, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 46, Blk. M, E.L.R.R. Sur.
Fishing 4,860 ft.

O. F. Dickinson, trustee's No. 1 C. H. Doaks, 368 ft. from S and 330 ft. from E of SW cor., Sec. 4, Blk. H, E.L. Ry. Co. Sur.
S.D. 155 ft.; new hole.

ECTOR COUNTY

Atlantic Oil Prod. Co.'s No. 1 T. P. Land Trust, 440 ft. from N and W of SE Sec. 11, Blk. 43, Twp. 1s, T.&P. Sur.
T.D. 4,391 ft.; plugged back to 4,255 ft.; testing.

Continental Oil Co.'s No. 1 Wight, 2,200 ft. from S and W, Sec. 21, Blk. 43, Twp. 1s, T.&P. Sur.
Rig.

Empire Gas & Fuel Co.'s No. 1 Cummins, 440 ft. from S and E, Sec. 10, Blk. 45, Twp. 1n, T.&P. Sur.
Drlg. by tools 4,130 ft.

Eppenauer Drlg. Co. et al No. 1 Wight, 440 ft. from N and W of NE ¼ Sec. 22, Blk. 43, Twp. 1s, T.&P. Sur.
Rotary rig.

Landreth Prod. Co.'s No. 1-B Blakney, 440 ft. from S and W, Sec. 22, Blk. 44, Twp. 1n, T.&P. Sur.
Spudding.

Landreth Prod. Co.'s No. 1 Blakeney, 440 ft. from N and E, Sec. 28, Blk. 43, Twp. 1n, T.&P. Sur.
Elev. 3,066 ft.; drlg. 1,179 ft.

Landreth Prod. Co.'s No. 1-B O. B. Holt, 660 ft. from N and 1,980 ft. from E lines of Sec. 19, Blk. "A," P.S.L. Sur.
T.D. 4,323 ft.; T.P. 4,274 ft.; shot; testing.

Landreth Prod. Co.'s No. 1 Cowden Heirs, 440 ft. from S and W, Sec. 18, Blk. 44, Twp. 1s, T.&P. Sur.
S.D. 4,470 ft.; sulphur water at 4,450 ft.

Landreth Prod. Co.'s No. 2 Scharbauer, 2,200 ft. from N and 440 ft. from W, Sec. 13, Blk. A, P.S.L. Sur.
Elev. 3,142 ft.; drlg. 2,760 ft.

C. L. Peters' No. 1 Connell, 330 ft. from N and E lines of NW of Sec. 12, Blk. B-16, P.S.L. Sur.
S.D. 2,465 ft.

Phillips Pet. Co. and Pure's No. 1 C. Cowden, 2,200 ft. from N and 440 ft. from W,

(Continued on Page 44)

RANGER AND WICHITA FALLS DISTRICTS

Texas Co. has staked locations for another test, No. 9 Johnson, in Section 35, Block L, on the extreme west edge of Foard County, where it has several high gravity oil producing wells with heavy gas pressure. A test on the northwest edge recently proved dry, limiting the pool on the Cottle County side.

Childress County Wildcat

The southeast Childress County wildcat of Alma Oil Co. on the Mollie Low farm, in Section 417, about 4 miles southeast of Kirkland, has pulled tubing and is swabbing the hole through casing. During the week a fishing job for a swab and some wire line held up the swabbing job but this was overcome and the operators are again clearing the hole.

Interest has rapidly waned in the area and it is not known what the owners contemplate doing with the test. Many think so much oil could not be shown without a pool being located in the area somewhere.

Over in Hardeman County, east of the Childress County wildcat near Kirkland, Flannery and others' No. 1 Williams is shut down at 4,565 feet. The lease and royalty play drifted from the Kirkland test toward the Hardeman County test with hundreds of acres being taken by independent operators, many Oklahoma and East Texas men making a play. E. B. Smith, of Dallas, has taken two drilling blocks just south of the Red River in Hardeman County. One block lies just south of Dongail Oil Co.'s No. 1 J. M. Hamill, in Section 31, Township 1s, Range 22n, 1 mile north of Red River in Jackson County, Oklahoma. It is to go to 6,000 feet. The block south of the river, in Hardeman County, centering in Section 1, G.C.&S.F. Survey, is composed of 2,375 acres. A 4,500-foot test is to be drilled on it. A second block centers in Surveys 12, 13 and 14, H.E.&W.T. Survey, composed of 3,500 acres. A similar depth test is to be put down on this block. These blocks are approximately 12 miles north of the Flannery and others' test.

Cooke County

McDaniels and Page of Wichita Falls are assembling a block of 4,500 acres centering in the east half of the J. Banning Survey, and are to start a 4,000-foot test within 90 days. This block adjoins the Ross Sterling block on which another 4,000-foot test is to be sunk.

Hamilton County

Frank Bryan of Waco is assembling 9,000 acres in a block centering in the James Haye Survey No. 16, 11 miles west of the county seat, Hamilton, extending into Comanche County. Geophysical Service, Inc., of Dallas has detailed the block with instruments. One of the major com-

(Continued on Page 43)

Camp Hill Test Is Plugged Back to Woodbine Sand; Field Has Two Producing Formations

By L. E. BREDBERG

DALLAS, Tex., June 17.—The sub-Clarksville producing pool at Camp Hill, 7 miles southeast of Palestine in Anderson County, has furnished a paradox in No. 1 Delaney, in the P. Martin Survey, south of No. 1 Maddox, which is a sub-Clarksville producer. Gulf Production Co. opened this pool several months ago, No. 1 Davey and Royall producing from the sub-Clarksville after it was drilled to the Woodbine, showed salt water and was plugged back to where it showed saturation when drilling. Three other tests, one a north offset to the discovery, and two others west of the discovery, have all been sub-Clarksville producers. No. 1 Delaney did not show for a producer from the sub-Clarksville, but has come through as a producer at total depth of 5,181 feet, in the Woodbine sand, reported topped at 5,177 feet last week. The well made 92 bbls. in 16½ hours through choke on tubing, with a working pressure on tubing of 250 pounds. It is pinched to 11 bbls. per hour.

This producer gives the field two producing formations, although all wells will not produce from both, as proved by this test and the four wells producing from the sub-Clarksville. The sub-Clarksville is not considered as good producing formation as the Woodbine, consequently the company will drill future wells to the Woodbine before they are completed. If the wells fail to produce from that formation they will be plugged back to the sub-Clarksville. This is the first field in the East Texas district to produce from the sub-Clarksville, and operators are not sure what the outcome of the wells and field will be. So far the wells have held up and the company has run a line into the field. The new formation is a member of the Eagleford shale section found between the Austin chalk and Woodbine sand.

The company's No. 1 Southern Pine Lumber Co., a north offset to the discovery, in the H. Main Survey, is producing from the sub-Clarksville topped at 5,103 feet, with a total depth of 5,106 feet. It made 185 bbls. in 13 hours through one-quarter inch choke. Tubing pressure on the well was 300 pounds.

There have been only two dry holes drilled in the area to date. One was 2 miles southwest of the discovery and one about 1½ miles due west of the discovery. There is ample room for a large field to extend in other directions.

Anderson County Wildcats

Sun Oil Co. and Hunt Production Co. are giving up No. 2 on the Alice Scott lands in the James Crawford Survey, near Slocum in the southern part of Anderson County. They failed to make a Woodbine sand producer out of the first test, so drilled a second in an effort to make a Carrizo sand producer. It showed fresh water and only a scum of oil on a several days' test and has been abandoned. Total depth is 1,153 feet.

Tide Water Oil Co.'s No. 1 C. T. Valentine, in the John Little Survey, north of Palestine 7 miles, has a nasty job in cutting off stuck drill stem hung 500 feet off bottom. Total depth of the hole is 5,203 feet and it has showed neither oil nor gas. Salt water at 5,282 feet caused it to be plugged back to 5,203 feet to the upper Woodbine.

Rusk Area—Cherokee County

Probably the most important test in the district is Scott and Turpin's No. 1 Whiteman and Decker, in the J. H. Armstrong Survey, about 2½ miles southeast of the two producing wells of the Rusk Pool, Cherokee County. This test topped the Austin chalk at 5,065 feet and has lost returns at 5,265 feet. Elevation is 546 feet. It is running 52 feet lower on structure than the nearest producer in the Rusk Pool, Wood and Young's No. 3 New Birmingham Development Co., about 800 feet southeast of the discovery and a much better well than the discovery.

Wood, Young and others' No. 4 New Birmingham Development Co., north of No. 3 producer, same survey, Levi Jordan, is drilling at 4,350 feet in Pecan Gap chalk. No other test has been drilled to the north. The pool is defined to the south and southwest by dry holes. The test is due for completion within the next 10 days.

Other Wildcatting

Sun Oil Co. and Hunt Production Co.'s No. 1 Judge, 3½ miles southeast of Tyler, in Smith County, topped the Austin chalk at 4,630 feet and is drilling at 4,800 feet.

Abandonments

Two miles east of Normangee in Leon County, H. Williams and others have abandoned No. 1 Henry, at a total depth of 3,060 feet. It is in the R. Rogers Survey.

Adams and others have abandoned a shallow test in Falls County at a total depth of 978 feet and Keen and others abandoned their R. L. and W. M. Kelley location in the W. E. Johnson Survey, 3 miles west of Ladonia in Fannin County.

Humphries has abandoned No. 1 J. H. Brown, in the R. Wyatt Survey, 2½ miles south of Ore City in Upshur County, at a total depth of 3,940 feet. It had Pecan Gap chalk from 2,420-3,065 feet and topped the Austin chalk at 3,802 feet. Elevation is 449 feet.

Cauble and Thompson's No. 2 Reed, in the F. Thweatt Survey, 3 miles southeast of Greenville, in Hunt County, was dry at a total depth of 3,535 feet.

Killough and others' No. 1 J. S. Strickland, in Cherokee County, was a "duster" at a total depth of 3,505 feet in upper Taylor.

Wildcat Locations

Stanley Thompson of Fort Worth has staked location on the G. H. Allen farm in the William King Survey, 3 miles south of Hughes Springs in Cherokee County, and is to drill a Woodbine sand test.

Morrow and others have staked location and are drilling on a test on the Mrs. J. J. Halton farm in the B. Flores Survey, 5 miles east of Nacogdoches, in Nacogdoches County.

R. W. Fair and others are drilling No. 1 F. Terrell, in the Eli Delk Survey, 2½ miles northeast of Sand Flat, Smith County, and have interested several companies in the test and acreage.

Blocks and Proposed Tests

B. B. Brawley of Denton has assembled about 1,500 acres southwest of the town of Telephone and proposes to drill a Woodbine sand test in Fannin County.

Stewart Brothers of Fairfield may drill a Woodbine sand test in the Red Lake area about 3 miles south of Turlington in Freestone County. There are two gassers on the Ball lands in this area, shut in for want of an outlet which may be furnished by Lone Star Gas Co. There is no oil production to date although other tests are expected to be drilled.

J. S. Jones, of Redwater, is assembling a block of 4,950 acres joining the Tex-Ark Oil Co.'s block on the north, north of that company's No. 1 Hamilton estate which is drilling 4 miles south of Red River. The block centers in the east half of the W. Daniel Morris Survey, M.E.P.&P. Survey, McClure, Bowie County School Lands, Schimpshire, A. Glass, R. Smith, Taylor and other adjacent surveys, Bowie County, and 5,000 more acres are to be taken in the area to fill out what was proposed as a 10,000-acre block.

A 5,000-acre block is being taken 5 miles southwest of Sulphur Springs, in Hopkins County, for a Woodbine sand test. G. H. Black is taking the block.

Tom Scott is taking a block of acreage in the southeast corner of Lamar County, assigning same to D. S. Hager. Part of the 11,000-acre block falls in Delta County.

Delta Drilling Co. has taken over the old General Crude Oil Co.'s lease 6 miles west of Jamestown in Upshur County around the old Cranfill and Reynolds' No. 1 Rash which was an outpost producer north of the East Texas Field's northern limits, thought to be producing from a deeper pay. Delta is to start a test on the lease by June 25. This company has recently extended the northwestern part of the field about a mile and is active in edge drilling.

East Central Texas Wildcats

Week Ending June 15

CAMP HILL AREA—ANDERSON COUNTY

Gulf Prod. Co.'s No. 1 DeLaney, 200 ft. out of most northerly NW cor. of 173.2-ac. tract; elevation 573 ft.; P. Martin Sur.
Drlg. plug; T.D. 5,181 ft.

Gulf Prod. Co.'s No. 1 Southern Pine Lumber Co., 330 ft. out of SE cor., H. Main Sur.
B.P.G. 4,234 ft.; A.C. 4,868-5,095 ft.; T.D. 5,106 ft.; set csg. 5,068 ft.

Hunt and Sun Oil Co.'s No. 2 Alice Scott, 30 ft. N of No. 1, James Crawford Sur. Swbd. fresh wtr. and scum oil; T.D. 1,153 ft.; R.U. tubing to blow with air.

J. W. Luttes' No. 1 C. McKee, 2,640 ft. from N line of lease and survey and 330 ft. from W line of McKey 800-ac. tract.
Elev. 391 ft.; drlg. 4,220 ft.; top Pecan 3,830 ft.

CAYUGA AREA—ANDERSON COUNTY

Tide Water Oil Co. et al's No. 21-A Wells, 4,079 ft. N and 2,333 ft. W of lease, S. Edmondson Sur. (Trinity test).
Drlg. 8,400 ft.

LONG LAKE AREA—ANDERSON COUNTY

Tide Water Oil Co. et al's No. 1 Shaw and Kern, 1,400 ft. from S and 2,333 ft. from E line, in D. Parker Sur.
Top Pecan 3,506 ft.; drlg. 3,518 ft.

BOWIE COUNTY

Tex-Ark. Oil Co.'s No. 1 Hamilton Estate, 600 ft. E and 350 ft. N lines, J. Milan Sur., 4 miles S of Red River.
SID. 1,121 ft.

CHEROKEE COUNTY

H. A. Baker et al's No. 1 T. Smith, 630 ft. S and 660 ft. W of SW cor. of W. A. Newton's 260-ac. tract, 2½ miles N of Jacksonville, J. Pineda Sur.
Drlg. 2,625 ft.

Scott & Turpin's No. 1 Whiteman & Decker, 450 ft. N and 150 ft. W, J. H. Armstrong Sur.
Drlg. 4,645 ft.; top Pecan 4,184 ft.; base 4,577 ft.; elev. 546 ft.

Jacksonville O. & G. Co.'s No. 1 H. D. Henderson, 660 ft. from N and W lines of 40-ac. tract out of Tankersley 104-ac. tract, 5 miles NE of Jacksonville, J. Pineda Sur.
S.D. 693 ft.

S. Thompson's No. 1 G. H. Allen, 330 ft. out of SW cor. 150-ac. tract, Wm. King Sur., 3 miles S of Hughes Spring.
Location.

Wilson Stubbs Oil Co.'s No. 1 Rowborts, 450 ft. from S line, 150 ft. from W line of 100-ac. tract, 2 miles SW of Jacksonville, J. D. Wolfin Sur.
S.D. 1,553 ft.

Wood et al's No. 4 New Birmingham Dev. Co., 750 ft. S and 150 ft. E line, 600 ft. N of No. 3.
Drlg. 3,615 ft.

FANNIN COUNTY

B. F. Allen's No. 1-B Argo, center of 16⅓-ac. tract in J. G. Swisher Sur., 1 mile S of Ector.
Rigged up.

Warner Moore et al's No. 1 Hancock, 400 ft. from W and 150 ft. N lines, Sec. 16, L. M. Baldock Sur., ¼ mile S of Trenton.
S.D. 170 ft.

FRANKLIN COUNTY

Ferrell et al's No. 1 G. K. Ayers, C. H. Simms Sur., 900 ft. from N line and 5,300 ft. from W line of survey, 6 mi. NE of Winnsboro on 50-ac. tract.
Moving in material.

FREESTONE COUNTY

Hoover et al's No. 1 McFall, 150 ft. S and W lines, S. Garrison Sur., E of Mexia.
Location.

J. E. Milburn's No. 1 S. E. McShan, 4,000 ft. NW and 5,000 ft. NE of tract, 3 miles SE of Donie, G. Diaz Sur.
S.D. 270 ft.

GREGG COUNTY

O. T. Clark's No. 1 Williams, 2,100 ft. from S and 2,400 ft. from W of D. Hill Sur., 3 miles NE of Longview.
S.D. 3,771 ft.

HENDERSON COUNTY

Great State's No. 1 Ansley, 1,724 ft. W and 300 ft. S of SE cor. of M. Matthews Sur., N. H. T. Thompson Sur.
S.D. 2,315 ft.

C. D. Neff et al's No. 1 H. G. Small, 450 ft. from W and 375 ft. from E lines, I. Greeson Sur., SW of Crossroads.
S.D. 200 ft.

H. M. Wilson's No. 1 fee, 970 varas S of NE cor. of 943-ac. tract, 5 miles N of Malahoff.
Derrick.

HOPKINS COUNTY

D. A. Hale et al's No. 1 L. M. Hall, 200 ft. from N and E lines of 70-ac. tract, 1 mile SE of Miller Bros. A. Caro Sur.
Washing to bottom; T.D. 2,950 ft.

HUNT COUNTY

Cauble & Thompson's No. 2 Y. B. Reed, F. Thweatt Sur., 150 ft. N of No. 1.
S.D. 800 ft.

J. F. Morrissey & Co., Inc.'s No. 1 Fry, 543 ft. from N and 200 ft. from E of 146-ac. tract, 7 miles N of Commerce, C. Davis Sur.
S.D. 1,778 ft.; shale and lime.

H. G. Samson's No. 1 Phillips, 1,200 ft. E of Winan's No. 1 Phillips, University Lands Sur., 2 miles W of Commerce.
Elev. 522 ft.; top Woodbine 2,596 ft.; top red beds 2,750 ft.; drlg. shale 2,880 ft.

KAUFMAN COUNTY

Germany et al's No. 1 Clark, 951 ft. N and 1,000 ft. W of tract, S. Eden Sur.
T.D. 1,780 ft.

Murry & Emerson's No. 1 G. W. Martin, 1,660 ft. from W and 250 ft. from N of 140-ac. tract, from W. L. C. Butler Sur., 2 miles NE of Kemp.
Drlg. 1,270 ft.

L. P. Kean's No. 1 J. B. Hunter, R. Sowell Sur., 300 ft. from SW and 150 ft. from SE of 50-ac. tract, 4 miles S of Terrell.
S.D. 3,400 ft.

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There were 130 locations staked in the East Texas Field this week. There are nearly 18,000 wells in the field, with over 100 being completed each week. There were 112 wells completed this week, 1 a dry hole on the east side in Gregg County. One was completed on gas-lift, six were completed swabbing and three proved pumpers.

COMPLETIONS IN EAST TEXAS

Gregg County

Arkansas Fuel Oil Co.'s No. 3 Taylor, top pay 3,521 feet, total depth 3,546 feet, initial production 28 bbls. in 15 minutes; No. 14 Whittaker, top pay 3,517 feet, total depth 3,542 feet, initial production 30 bbls. in 15 minutes. Atlantic Oil Producing Co.'s No. 7-B Tooke, top pay 3,536 feet, total depth 3,600 feet, initial production 142 bbls. per hour. Barnsdall-Sun Oil Co.'s No. 13 Bingham, top pay 3,528 feet, total depth 3,556 feet, initial production 72 bbls. per hour. Bond's No. 3 Alexander, top pay 3,548

feet, total depth 3,553 feet, initial production 30 bbls. per hour. C. & G. Oil Co.'s No. 19 Harris, top pay 3,536 feet, total depth 3,552 feet, initial production 75 bbls. per hour. F.H.E. Oil Co.'s No. 18 Christian, top pay 3,630 feet, total depth 3,670 feet, initial production 30 bbls. in 30 minutes; No. 6 Christian, top pay 3,637 feet, total depth 3,680 feet, initial production 30 bbls. in 30 minutes. Faith Oil Co.'s No. 17 Barrett, top pay 3,649 feet, total depth 3,672 feet, initial production 50 bbls. per hour. Galvez Oil Co.'s No. 8 Shepherd, top pay 3,557 feet, total depth 3,565 feet, initial production 20 bbls. in 20 minutes. Glasscock's No. 2 Center Point, top pay 3,486 feet, total depth 3,502 feet, initial production 30 bbls. in 15 minutes. Gulf Production Co.'s No. 46 Shepherd, top pay 3,502 feet, total depth 3,530 feet, initial production 60 bbls. per hour. Humble Oil & Refining Co.'s No. 27 Holland, top pay 3,523 feet, total depth 3,561 feet, initial production 70 bbls. per hour; No. 8 Wells, top pay 3,651 feet, total depth 3,675 feet, initial production 63 bbls. per hour. Iowa-Payne Oil Co.'s No. 8 York, top pay 3,-580 feet, total depth 3,583 feet, initial production 50 bbls. in 30 minutes. Jackson, Wise and others' No. 7 Corbin, top pay 3,606 feet, total depth 3,651 feet, initial production 100 bbls. per hour.

Kewanee Oil Co.'s No. 21 fee, top pay 3,550 feet, total depth 3,594 feet, initial production 55 bbls. in 30 minutes. Kimberlin and Howse's No. 1 Block, top pay 3,589 feet, total depth 3,593 feet, initial production 68 bbls. per hour through three-quarters inch choke. Magnolia Petroleum Co.'s No. 6 Parnell, top pay 3,-600 feet, total depth 3,604 feet, initial production 120 bbls. per hour. National Oil & Gas Co.'s No. 6 Moser, top pay 3,-538 feet, total depth 3,587 feet, initial production 60 bbls. per hour, through 1-inch choke. Peyton Brothers' No. 5 Christian, top pay 3,545 feet, total depth 3,600 feet, initial production 28 bbls. in 30 minutes. Pickens, receiver's No. 4 Hoyt, top pay 3,541 feet, total depth 3,-580 feet, initial production 20 bbls. in 15 minutes. Rancho Oil Co.'s No. 4 Bumpas, top pay 3,555 feet, total depth 3,580 feet, initial production 70 bbls. per hour. Selby Oil & Gas Co.'s No. 24-A Snavely, top pay 3,559 feet, total depth 3,580 feet, initial production 38 bbls. in 30 minutes. Sinclair Prairie Oil Co.'s No. 15 Williams, top pay 3,490 feet, total depth 3,-530 feet, initial production 38 bbls. in 30 minutes. Stewart Holdings' No. 2 Lathrop, top pay 3,595 feet, total depth 3,-598 feet, initial production 60 bbls. per hour. Sun Oil Co.'s No. 12 Campbell, top pay 3,468 feet, total depth 3,547 feet, initial production 67 bbls. per hour; No. 29 Haynes, top pay 3,583 feet, total depth 3,625 feet, initial production 76 bbls. per hour. Superior Oil Co.'s No. 17-A Prichard, top pay 3,514 feet, total depth 3,559 feet, initial production 90 bbls. per hour. Wheelock-Collins' No. 1 Castleberry, dry and abandoned at 3,615 feet. Arkansas Fuel Oil Co.'s No. 22 Hughey-Ross, top pay 3,519 feet, total depth 3,546 feet, initial production 33 bbls. in 15 minutes. Southport Petroleum Co.'s No. 3 L&G.N., top pay 3,532 feet, total depth 3,583 feet, initial production 5 bbls. per hour.

Galvez Oil Co.'s No. 12 Cole, top pay 3,545 feet, total depth 3,560 feet, initial production 30 bbls. per hour. Gralenor's No. 4 King, top pay 3,679 feet, total depth 3,681 feet, initial production 75 bbls. per hour through three-quarters inch choke. Gulf Production Co.'s No. 44 Brown, top pay 3,566 feet, total depth 3,602 feet, initial production 60 bbls. per hour; No. 8 Nicholas, top pay 3,672 feet, total depth 3,684 feet, initial production 18 bbls. per hour through one-quarter inch choke; No. 36 Spear, top pay 3,553 feet, total depth 3,583 feet, initial production 65 bbls. per hour; No. 16 Strong, top pay 3,695 feet, total depth 3,705 feet, initial production 25 bbls. per hour through three-quarters inch choke. Julian Oil & Refining Co.'s No. 8 England, top pay 3,540 feet, total depth 3,590 feet, initial production 40 bbls. per hour. McMahan's No. 3 King, top pay 3,602 feet, total depth 3,623 feet, initial production 50 bbls. per hour. McMahon's No. 11 Spear-Laird, top pay 3,623 feet, total depth 3,629 feet, initial production 30 bbls. in 40 minutes. Magnolia Petroleum Co.'s No. 9 Radford, top pay 3,579 feet, total depth 3,600 feet, initial production 116 bbls. per hour. Moss' No. 11 Marshall, top pay 3,518 feet, total depth 3,-538 feet, initial production 40 bbls. per hour. Pitkins-Golston's No. 6 Williams, top pay 3,600 feet, total depth 3,610 feet, initial production 80 bbls. per hour. Tide Water Oil Co.'s No. 30 Hughey-Ross, top pay 3,484 feet, total depth 3,516 feet, initial production 60 bbls. per hour. Trapp's No. 3 King, top pay 3,521 feet, total depth 3,590 feet, initial production 40 bbls. per hour. Vise and others' No. 4-B Hilburn-Wells, top pay 3,651 feet, total depth 3,655 feet, initial production 55 bbls. per hour. Wels-Sander's No. 8 Barnett, top pay 3,726 feet, total depth 3,728 feet, initial production 60 bbls. per hour. Wrather's No. 1 City of Kilgore, top pay 3,530 feet, total depth 3,567 feet, initial production 30 bbls. per hour through 1-inch choke.

Rusk County

Gulf Production Co.'s No. 19-A Christian, top pay 3,574 feet, total depth 3,589 feet, initial production 55 bbls. per hour through three-quarters inch choke; No. 11-B Christian, top pay 3,627 feet, total depth 3,632 feet, initial production 87 bbls. per hour. Humble Oil & Refining Co.'s No. 161 Crim, top pay 3,658 feet, total depth 3,722 feet, initial production 72 bbls. per hour; No. 12 Peterson, top pay 3,550 feet, total depth 3,621 feet, initial production 17 bbls. per hour on gas lift; No. 32 Peterson, top pay 3,658 feet, total depth 3,700 feet, initial production 90 bbls. per hour; No. 12-A Sexton, top pay 3,680 feet, total depth 3,740 feet, initial production 37 bbls. per hour. Louisiana Oil & Refining Co.'s No. 12 Jernigan, top pay 3,586 feet, total depth 3,611 feet, initial production 21 bbls. in 15 minutes. Magnolia Petroleum Co.'s No. 13 Crim, top pay 3,628 feet, total depth 3,662 feet, initial production 100 bbls. per hour. Navarro Oil Co.'s No. 10 Peterson, top pay 3,630 feet, total depth 3,668 feet, initial production 104 bbls. per hour. Shell Petroleum Corp.'s No. 25 Russell, top pay 3,585 feet, total depth 3,643 feet, initial production 90 bbls. per hour. Tide Water Oil Co.'s No. 16-A Bean, top pay 3,627 feet, total depth 3,641 feet, initial production 60 bbls. per hour. Atlantic Oil Producing Co.'s No. 15 Fair, top pay 3,601 feet, total depth 3,617 feet, initial production 110 bbls. per hour.

Bateman Oil & Gas Co.'s No. 5 Worrell, top pay 3,562 feet, total depth 3,588 feet, initial production 20 bbls. in two hours, swabbing. British-American Oil Co.'s No. 7 Stone, top pay 3,625 feet, total depth 3,660 feet, initial production 15 bbls. in 15 minutes. Burwyn Oil Co.'s No. 7 Smith, top pay 3,621 feet, total depth 3,675 feet, initial production 106 bbls. in six hours, swabbing. Currin Oil Corp.'s No. 3 Frederick, top pay 3,580 feet, total depth 3,635 feet, initial production 20 bbls. per hour, swabbing. Deering & Son's No. 9-A Fenney, top pay 3,620 feet, total depth 3,720 feet, initial production 26 bbls. per hour. Falcon Oil Co.'s No. 1 Newton, top pay 3,690 feet, total depth 3,692 feet, initial production 10 bbls. per hour, pumping. Flannigan's No. 2 Deason, top pay 3,709 feet, total depth 3,753 feet, initial production 40 bbls. per hour through 1-inch choke. G.M.B. Oil Co.'s No. 2-B Camp, top pay 3,542 feet, total depth 3,615 feet, initial production 20 bbls. per hour, pumping. Gant and others' No. 3 Harris, top pay 3,629 feet, total depth 3,631 feet, initial production 20 bbls. per hour; No. 3 Strickland, top pay 3,598 feet, total depth 3,642 feet, initial production 20 bbls. per hour. Gulf Production Co.'s No. 34 Turner, top pay 3,728 feet, total depth 3,735 feet, initial production 5 bbls. per hour through one-quarter inch choke. Humble Oil & Refining Co.'s No. 17 Guerin, top pay 3,676 feet, total depth 3,721 feet, initial production 75 bbls. per hour; No. 16 Piercy, top pay 3,748 feet, total depth 3,758 feet, initial production 50 bbls. per hour; No. 18 Wheelis, top pay 3,738 feet, total depth 3,739 feet, initial production 66 bbls. per hour. Hunt Production Co.'s No. 23-C Fair, top pay 3,653 feet, total depth 3,655 feet, initial production 35 bbls. in 20 minutes; No. 7-D Fair, top pay 3,653 feet, total depth 3,665 feet, initial production 37 bbls. in 20 minutes; No. 7-D Fair, top pay 3,653 feet, total depth 3,665 feet, initial production 37 bbls. in 20 minutes. Lide-Tayloe Oil Co.'s No. 9 Young, top pay 3,662 feet, total depth 3,736 feet, initial production 40 bbls. per hour.

Marathon Oil Co.'s No. 75 Cross, top pay 3,629 feet, total depth 3,657 feet, initial production 68 bbls. per hour; No. 16 Graham, top pay 3,620 feet, total depth 3,669 feet, initial production 74 bbls. per hour; No. 80 Grissom, top pay 3,612 feet, total depth 3,620 feet, initial production 88 bbls. per hour. Miller Production Co.'s No. 12 Bradford, top pay 3,541 feet, total depth 3,655 feet, initial production 21 bbls. per hour, swabbing. Neversuch Oil Co.'s No. 3 Wilson, top pay 3,605 feet, total depth 3,620 feet, initial production 118 bbls. per hour. Ray's No. 10 Wilson, top pay 3,616 feet, total depth 3,630 feet, initial production 60 bbls. per hour. Salmon-Carter's No. 1-B Frederick, top pay 3,530 feet, total depth 3,550 feet, initial production 10 bbls. per hour, pumping. Shell Petroleum Corp.'s No. 16-A Brooks, top pay 3,646 feet, total depth 3,724 feet, initial production 25 bbls. in 30 minutes; No. 22-B Brooks, top pay 3,648 feet, total depth 3,720 feet, initial production 60 bbls. per hour. E. L. Smith Oil Co.'s No. 4 Wooley, top pay 3,545 feet, total depth 3,647 feet, initial production 20 bbls. in four hours, swabbing. Snowden and others' No. 1 Worrell, top pay 3,564 feet, total depth 3,619 feet, initial production 10 bbls. per hour, swabbing. Standard of Kansas' No. 8 Thompson, top pay 3,619 feet, total depth 3,630 feet, initial production 90 bbls. per hour. Tripp-Mead Oil Co.'s No. 8 Thompson, top pay 3,786 feet, total depth 3,790 feet, initial production 75 bbls. per hour. Venable and McClanahan's No. 28 Birdwell, top pay 3,598 feet, total depth 3,618 feet, initial production 100 bbls. per hour; No. 32 Birdwell, top pay 3,595 feet, total depth 3,632 feet, initial production 100 bbls. per hour; No. 36 Birdwell, top pay 3,602 feet, total depth 3,623 feet, initial production 70 bbls. per hour. Ward Oil Co.'s No. 30 Thrash, top pay 3,780 feet, total depth 3,785 feet, initial production 75 bbls. per hour.

Smith County

Anderson's No. 1 Denton, top pay 3,-736 feet, initial production 25 bbls. per hour through three-quarters inch choke. Byers and others' No. 3 Cole, top pay 3,-769 feet total depth 3,770 feet, initial production 48 bbls. per hour. Genecov and Roosth's No. 1 Pace, top pay 3,759 feet, total depth 3,760 feet, initial production 15 bbls. in 30 minutes. Illinois Oil Co.'s No. 40 Mayfield, top pay 3,806 feet, total depth 3,807 feet, initial production 130 bbls. in two hours. McCutchin's No. 3-B Irion, top pay 3,756 feet, total depth 3,758 feet, initial production 20 bbls. in 20 minutes. Magnolia Petroleum Co.'s No. 5 Tviska, top pay 3,755 feet, total depth 3,757 feet, initial production 21 bbls. in 10 minutes; No. 29 Wright, top pay 3,670 feet, total depth 3,675 feet, initial production 19 bbls. in 15 minutes through 1-inch choke. Stewart Holdings' No. 3 Cook, top pay 3,724 feet, total depth 3,730 feet, initial production 130 bbls. per hour. Tex-Canadian Oil Co.'s No. 2-C Irion, top pay 3,752 feet, total depth 3,755 feet, initial production 20 bbls. in 20 minutes. Texas Co.'s No. 22 Blackwell, top pay 3,708 feet, total depth 3,725 feet, initial production 60 bbls. per hour.

Upshur County

Barnett's No. 1 Buckholt, top pay 3,-717 feet, total depth 3,719 feet, initial production 61 bbls. per hour. Cabot Carbon Co.'s No. 13 Graves, top pay 3,636 feet, total depth 3,643 feet, initial production 65 bbls. per hour. Delta Drilling Co.'s No. 3 Salter-Brawley, top pay 3,735 feet, total depth 3,743 feet, initial production 40 bbls. per hour. Humble Oil & Refining Co.'s No. 27 Edwards, top pay 3,656 feet, total depth 3,673 feet, initial production 49 bbls. per hour. Mullins' No. 2 Johnson, top pay 3,645 feet, total depth 3,654 feet, initial production 75 bbls. per hour. Thibedeaux's No. 8 Sanders, top pay 3,644 feet, total depth 3,660 feet, initial production 60 bbls. per hour. Trico Oil Co.'s No. 2 Free, top pay 3,643 feet, total depth 3,654 feet, initial production 75 bbls. per hour. United East & West Oil Co.'s No. 5 Shelton, top pay 3,689 feet, total depth 3,-696 feet, initial production 25 bbls. per hour.

MISCELLANEOUS COMPLETIONS IN EAST TEXAS DISTRICT

Anderson County (Cayuga Area)

Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 3 Wortham, top sand 4,067 feet, total depth 4,088 feet, initial production 124 bbls. in 24 hours through one-eighth inch choke.

Cherokee County

Killough and others' No. 1 J. S. Strickland, dry and abandoned at 3,505 feet, upper Taylor.

Falls County

Adams and others' No. 1 Walker, dry and abandoned 978 feet.

Fannin County

Keen and others' No. 1 R. L. and W. M. Kelley, abandoned location, 3 miles west of Ladonia.

Leon County

H. Williams' No. 1 Henry, dry and abandoned 3,060 feet, 2 miles east of Normangee.

Upshur County

Humphries' No. 1 J. H. Brown, 2¼ miles south of Ore City, dry and abandoned 3,940 feet, elevation 449 feet; top Austin 3,802 ft, top Pecan Gap 2,420-3,065 feet.

Van Zandt County

Shell Petroleum Corp.'s No. 5 Taylor, top sand 2,544 feet, total depth 2,943 feet, initial production 100 bbls. first 30 minutes through half-inch choke.

Hunt County

Cauble and Thompson's No. 1 Reed, 3 miles southeast of Greenville, dry and abandoned 3,535 feet.

New Practices Used to Combat Corrosion

(Continued from Page 14)

loudly audible to a man wearing an earset. The two coils in the detector equipment are tuned differently so the detector locating a holiday can be determined readily, and the holiday found and marked.

Use of auxiliary radio receiving set also has facilitated the detection of a greater number of holidays on unwrapped, enamel coated pipe. It was found that even on such pipe, numerous holidays were passed up due to being so small the jumping spark was not noticeable to the operator of the detector. Also it was possible for the operator to move the detector so fast a holiday would be overlooked. The radio, in which the static is greatly amplified, serves as a double check on the detector operators in such cases. Consequently, the company is able to eliminate more holidays, and in turn, more thoroughly protect the pipe against corrosive elements.

CHICAGO OIL MEN

CHICAGO, June 15.—The annual golf party and jockey's handicap of the Chicago Oil Men's Club will be held June 20 at the Medinah Country Club. The tournament starts at 12:30 o'clock. An elaborate luncheon and a full course steak dinner have been planned. Indications early in the week were for a large attendance.

Injuries in Accident Are Fatal to Lawrence Minor

Injuries suffered in an automobile accident caused the death May 29 of Lawrence L. Minor, Jr., director and sales manager of Spang, Chalfant & Co., Inc.,

LAWRENCE L. MINOR, JR.

Pittsburgh, Pa. Mr. Minor, among the best-known pipe men in the United States, had spent virtually his whole business life with that company, having entered its service at the age of 22 and working his way up from the mill. He was born in Uniontown, Pa., June 10, 1887, and was educated at Virginia Military Institute.

Diesel Fuel Oils Lower; Bright Stocks Are Higher

(Continued from Page 25)

al monthly revenue for distributors in this section over the next few months.

Refinery Prices

Except for the bright stock price (export) previously mentioned, refinery prices at Atlantic Seaboard and Gulf Coast refineries and water terminals show practically no changes from last week. In New York harbor the domestic gasoline tank car prices range from 5¾ cents to 6¼ cents for the white grades. At the Gulf, most sellers are still quoting 5½ cents for 64-66 375 endpoint. There are more inquiries for export gasoline and two cargoes are said to have been placed recently. Kerosene is weak both in domestic and export markets. There is some confusion in wholesale and refinery markets on furnace oils and industrial oils. An effort is to be made this week to improve this situation and bring about a more stable condition. The wax demand has been slow over the past week.

Boston Gasoline Prices

The most disturbing gasoline price situation in this territory is in Boston. Prices at that point have been below normal for several weeks and were low most of last year. On June 11, the station price on regular grade gasoline was reduced an additional cent and posted dealer one-half cent. The present prices, exclusive of 4-cent state and federal taxes, are 7 cents posted dealer and 8.5 cents station. Figured on a basis of 6 cents for distribution covering jobber and dealer margins and the net tank car price at that point is 2.5 cents.

OIL PILOT CREMATED

FERNIE, British Columbia, June 15. Jack Beckwith, pilot, of Vancouver, was burned to death and R. B. Grant of Vancouver slightly injured when their airplane crashed and burst into flames while taking off from the local airport. The men, employed by an oil company, had loaded gasoline and were taking off for the Flathead oil district in southwestern British Columbia.

West Texas Fields

(Continued from Page 40)

panies has assigned a geologist to make a reconnaissance in the area.

Montague County

Seitz-Comegys and Seitz of Wichita Falls have taken a block centering in the J. F. Torrey Survey in Montague County and are to put down a 2,500-foot wildcat test within 60 days.

Archer County

Grace and Wood's No. 1 Archer County, a wildcat about 4 miles southwest of the Chalk Hill deep production in Archer County, in Section 182, Thomas Glass Survey, which appeared as a producer from sand logged at 2,830-37 feet, drilled to 2,845 feet in broken sand, is now estimated good for 75 bbls. per day. The oil tests 40 degrees.

Production in the Wichita Falls district averaged 63,300 bbls. per day. High waters shut down many drilling tests this week, as in other districts, but 40 tests were completed.

WICHITA FALLS COMPLETIONS

Archer County

Harry W. Black's No. 1 E. Colgan, total depth 1,501 feet, dry and abandoned. L. T. Burns' No. 2 Mamie Kolb, top pay 1,235 feet, total depth 1,250 feet, initial production 20 bbls. per day. J. D. Carpenter's No. 1 J. D. Carpenter, total depth 1,215 feet, dry and abandoned. J. C. Clower and others' No. 4 B. C. Andrews, total depth 995 feet, dry and abandoned. Continental Oil Co.'s No. 13-E Falls, top pay 1,097 feet, total depth 1,116 feet, initial production 60 bbls. per day pumping; No. 9-A W. J. Logan, top pay 1,166 feet, total depth 1,181½ feet, initial production 102 bbls. per day pumping; No. 10-A W. J. Logan, top pay 1,148 feet, total depth 1,164½ feet, initial production 100 bbls. per day pumping. Cullum and Sinclair Prairie Oil Co.'s No. 15 Falls (Scranton), top pay 1,104 feet, total depth 1,129 feet, initial production 341 bbls. in 24 hours pumping and flowing. F. H. E. Oil Corp.'s No. 13 W. T. Richardson, top pay 1,446 feet, total depth 1,453 feet, initial production 108 bbls. per day. Hamer and Scholl's No. 3 Andrews, top pay 1,032 feet, total depth 1,045 feet, plugged back to 1,037 feet, initial production 10 bbls. per day. J. H. Krahenbuhl and others' No. 1 Crawford Plowman estate, total depth 1,471 feet, dry and abandoned. E. S. McLaughlin and others' No. 1 W. H. Terrell, top pay 661 feet, total depth 681 feet, initial production 4 bbls. per day. Milroy Production Co.'s No. 6 H. O. Prideaux, total depth 680 feet, dry and abandoned. Perkins and Cullum's No. 15 C. L. Abercrombie, top pay 1,188 feet, total depth 1,195 feet, initial production 10 bbls. per day; No. 179 Falls, top pay 1,105 feet, total depth 1,125 feet, initial production 97½ bbls. per day pumping; No. 180 Falls, top pay 1,152 feet, total depth 1,175 feet, initial production estimated 150 bbls. per day. Petroleum Producers' No. 9-E J. T. Richardson, top pay 1,228 feet, total depth 1,249 feet, initial production 20 bbls. per day. United Producers' No. 1-B J. R. Garvey, total depth 910 feet, dry and abandoned.

Baylor County

Consolidated Oil Co. and Petroleum Producers' No. 6-D W. H. Portwood, top pay 1,385 feet, total depth 1,394 feet, initial production 200 bbls. per day; No. 7-D W. H. Portwood, top pay 1,362 feet, total depth 1,392 feet, initial production 250 bbls. per day.

Cooke County

R. Harper and others' No. 1 F. R. Grotte, total depth 1,206 feet, dry and abandoned.

Wichita County

R. R. Clark and others' No. 38 Bickley estate, top pay 1,956 feet, total depth 1,973 feet, initial production 118 bbls. per day. Dinsmore and Stipe's No. 8 Burnett, total depth 528 feet, dry and abandoned. J. E. Keller and others' No. 1 L. C. Denny, total depth 1,112 feet, dry and abandoned. Magnolia Petroleum Co.'s No. 55 R. S. Allen (old well deepened—formerly produced from depth of 1,056 feet), top pay 1,543 feet, total depth 1,547 feet, initial production 90 bbls. per day. Petroleum Producers and C. W. Clark's No. 2 Allen and Kemp, total depth 1,666 feet, dry and abandoned. George Proctor and others' No. 2 George L. Dobie, total depth 1,104 feet, dry and abandoned. Rathke Oil Co.'s No. 1 T. L. Burnett and others, total depth 1,947 feet, dry and abandoned. H. L. Rugeley and others' No. 1 Waggoner estate, top pay 1,095 feet, total depth 1,104 feet, initial production 55 bbls. in 24 hours pumping. J. S. Smith and others' No. 31 C. Birk, top pay 276 feet, total depth 283 feet, initial production 2 bbls. per day.

Montague County

Continental Oil Co.'s No. 8 J. W. Lawler, top pay 1,739 feet, total depth 1,746 feet, initial production 307 bbls. per day pumping.

Wilbarger County

Solo Oil Co.'s No. 1 Waggoner estate, top pay 2,014 feet, total depth 2,071 feet, initial production 34 bbls. of oil and 74 bbls. of water per day pumping.

Young County

L. T. Burns' No. 1 R. E. Jones, total depth 1,145 feet, dry and abandoned. Clara Mae Douglas' No. 5 Finch estate, top pay 641 feet, total depth 652 feet, initial production 40 bbls. per day. W. D. Gillette and others' No. 1-A Belknap Coal Co., total depth 658 feet, dry and abandoned. Riner and Massie and others' No. 2 W. J. Logan estate, total depth 1,212 feet, dry and abandoned. S. H. Simmons' No. 2 W. H. Daley, total depth 595 feet, dry and abandoned. War-Tex Oil Co.'s No. 1 W. F. Hearne, total depth 1,519 feet, dry and abandoned. E. D. Willis and others' No. 3 Ledbetter, total depth 190 feet, dry and abandoned. L. A. Long and others' No. 2 E. C. Stovall, top pay 2,567 feet, total depth 2,626 feet, initial production 120 bbls. per day flowing.

PANHANDLE COMPLETIONS

Carson County

Ryan Consolidated Oil Co.'s No. 10 Block, top pay 3,058 feet, total depth 3,129 feet, shot with 330 quarts from 3,042-3,124 feet, initial production 40 bbls. per day, pumping. United Crude Oil Corp.'s No. 3 Cooper, top pay 2,995 feet, total depth 3,055 feet, shot with 250 quarts from 3,000-55 feet, initial production 374 bbls. per day, pumping.

Gray County

Bradshaw Oil & Gas Co.'s No. 5 Sockett, top pay 3,215 feet, total depth 3,308 feet, shot with 270 quarts from 3,227-3,300 feet, initial production 326 bbls. per day. Continental Oil Co.'s No. 11 Finley, top pay 2,985 feet, total depth 3,005 feet, initial production 706 bbls. per day, pumping. Jeffries' No. 1 Sailor, dry and abandoned at 3,354 feet. Kewanee Oil & Gas Co.'s No. 10 Smith Rest, top pay 3,125 feet, total depth 3,250 feet, shot with 400 quarts from 3,112-3,250 feet, initial production 350 bbls. per day, pumping.

Hutchinson County

Danube Oil & Gas Co.'s No. 2 Johnson, top pay 3,050 feet, total depth 3,098 feet, initial production 2,358 bbls. of oil with 5,000,000 feet of gas. Ora Huey's No. 1 Jameson, top pay 3,175 feet, plugged back to 2,996 feet, initial production 4,000,000 feet of gas.

Wheeler County

Alma Oil Co.'s No. 11 Johnson, top pay 2,420 feet, total depth 2,501 feet, initial production 350 bbls. per day. Benonine Oil Co.'s No. 1 Seright, dry and abandoned at 2,256 feet.

WEST TEXAS COMPLETIONS

Ector County

Gulf Production Co.'s No. 1-A Connell, top pay 3,455 feet, total depth 3,700 feet, shot with 300 quarts from 3,439-3,650 feet, initial production 255 bbls. per day; No. 7-A University, top pay 3,448 feet, total depth 3,700 feet, shot with 300 quarts from 3,443-3,683 feet, initial production 211 bbls. per day.

Pecos County

Stanolind Oil & Gas Co.'s No. 2 Eaton, total depth 1,640 feet, initial production 13 bbls. per day. Cardinal Oil Co.'s No. 34-E Tippett, total depth 532 feet, initial production 10 bbls. per day, pumping. Courvette Oil Co.'s No. 18-B Monroe, top pay 485 feet, total depth 565 feet, initial production 2 bbls. per day.

Ward County

California Co.'s No. 7 Gordon, top pay 2,279 feet, total depth 2,528 feet, shot with 310 quarts from 2,300-2,528 feet, initial production 2,437 bbls. per day. Richardson's No. 23-B Johnson, top pay 2,418 feet, total depth 2,586 feet, initial production 85 bbls. per day, shot with 200 quarts from 2,418-2,586 feet.

Winkler County

Magnolia Petroleum Co.'s No. 7 Walton, top pay 2,806 feet, total depth 3,000 feet, initial production 435 bbls. per day.

Crane County

Gulf Production Co.'s No. 12 McElroy, total depth 3,019 feet, shot with 280 quarts from 2,800-3,000 feet, initial production 70 bbls. per day, pumping.

Fisher County

Texas Co.'s No. 5 Jean, top pay 3,108 feet, total depth 3,119 feet, acidized, initial production 12 bbls. of oil and 5 bbls. of water per day.

COMPLETIONS, RANGER DISTRICT

Brown County

Herring's No. 2 Fry, total depth 1,875 feet, initial production 7 bbls. a day. Evans' No. 1 Garms, dry and abandoned at 983 feet. St. Marys Oil & Gas Co.'s No. 1 Newsom, total depth 640 feet, initial production 1 bbl. a day; No. 2 Newsom, total depth 625 feet, initial production 5 bbls. a day.

Callahan County

Hart and Witken's No. 1 Finley, total depth 413 feet, initial production 1,000,000 feet of gas. Schuman Syndicate's No. 1 Snyder, dry and abandoned 2,502 feet.

Coleman County

Anzac Oil Corp.'s No. 1-B Morris, total depth 3,020 feet, initial production 485,000 feet gas. Carter's No. 1 Goodson, total depth 3,610 feet, initial production 15 bbls. a day. Myers' No. 1 Gill, dry and abandoned 930 feet.

Eastland County

Woods' No. 1 Harrell, dry and abandoned at 1,980 feet.

Shackelford County

Engle and Kiser's No. 3 Matthews, total depth 701 feet, initial production 500,000 feet gas. Grisham and Hunter's No. 1 Parrish, dry and abandoned 3,734 feet. Morton and others' No. 1-A Davis, dry and abandoned 1,568 feet. Owens and Bailey's No. 1 Davis, dry and abandoned 1,697 feet. Rhodes and Higher's No. 13 Davis, dry and abandoned 1,476 feet. Roeser & Pendleton, Inc.'s No. 9 Dawson and others, dry and abandoned 1,675 feet; No. A-55-61 Cooke, total depth 1,241 feet, initial production 50 bbls. a day. Roeser & Pendleton and Humble Oil & Refining Co.'s No. 23-201 Morris and Buie, dry and abandoned 1,624 feet. Root and Rhodes Oil Co.'s No. 1 Newell, total depth 1,188 feet, initial production 5,500,000 feet of gas. Simmons' No. 11 Harvey, total depth 1,744 feet, initial production 25 bbls. a day.

Stephens County

The Texas Co.'s No. 45-A Parks, total depth 3,211 feet, initial production 10 bbls. oil and 3 bbls. salt water per day.

SIMMS SALE TO TIDE WATER

NEW YORK, June 17.—Stockholders of the Simms Petroleum Co. have approved sale of shares of Simms Oil Co., producing subsidiary, to the Tide Water Oil Co. for $8,775,000 plus interest.

The *Shaffer Boomer* IS MORE THAN A LOAD BINDER

With the SHAFFER you exert tremendous pull—greater than in any other boomer—IT'S NOT NECESSARY TO USE A CHEATER—you can pull 2,000 lbs. with the handle, and when load becomes loosened in transit it is only a matter of a few seconds—taking up a link or half a link. An absolute positive lock with handle in ANY POSITION. *Simplicity is the keynote of its operation.*

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MIDGET SIZE for 1/4" chain. $3.50 each.
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Bettis Protectors—are the **original** protectors. In seven years, hundreds of thousands of these all-rubber protectors have effected huge savings to drillers by affording complete protection to casing, by adding years of life to collars and tool joints. Exclusive with Bettis is the vacuum cup grip that grabs the pipe like a vise. Once in place, they remain until removed. Field records show that genuine Bettis Protectors outlast other types. This is due to tough all-rubber construction. You can drill faster, you can drill straighter, you can drill more hole per day with Bettis Protectors. They're the **best bet yet!** Standardize on the **original** protector—choice of operators in every field!

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PIPE LINE CONSTRUCTION

Stanolind Is Increasing Fitts Pipe Line Capacity

The Stanolind Pipe Line Co. has let two contracts for taking up and laying 8-inch pipe to improve its system in Oklahoma and increase the capacity to handle oil out of Fitts Pool. With the laying of a 20-mile 8-inch line from the Stanolind station in Fitts Pool to the Byng station almost due north on its main line it will be able to handle 20,000 bbls. of oil per day, and with some additions can increase this capacity quite materially when needed.

The first part of this improvement program is to remove about 18 miles of 8-inch dead line from the ditch south of Bristow. This pipe will be taken up by the Osage Construction Co., Tulsa, and cleaned and classified and part of it used in the line out of Fitts Pool.

The line from Fitts Pool north is to be laid by Lemons and Bradley, Tulsa, with reconditioned pipe from various points to be strung along this right of way and then welded and put in the ditch. The survey and right of way work on this line is completed and work of laying the pipe will start very soon.

Another contract let to Lemons and Bradley covers the laying of an 8-mile 8-inch extension to a loop in the Stanolind Pipe Line Co.'s line west of the St. Louis Pool. The loop was partly completed in 1931 and the present 8-mile extension carries the line into Payson station and adds to the capacity of this system. The pipe to be used for this work was reclaimed from an 8-inch line formerly laid into the Oklahoma City Field and is seamless double X grade. Stanolind had one 10-inch and one 8-inch line out of the Oklahoma City Field and removed the 8-inch line last year.

Practically all details for this work are completed and hauling material to the right of way is to start shortly and work pushed to completion as fast as possible. Later it is probable that some improvements and additions will be made to the Fitts Pool pump station as and when conditions there justify the investment.

CONFER ON DETROIT LINE

DETROIT, Mich., June 17.—Robert B. Anderson, Texas state tax commissioner, Lawrence Hagy, Texas natural gas producer, S. W. Freese and Lee Kirkwood, engineers, are here for a series of discussions regarding the proposed natural gas line from the Texas Panhandle to Detroit.

The projected pipe line would take a year to build and would cost $50,000,000.

Mr. Hagy told Mayor Frank Couzens, city councilmen, and Detroit City Gas Co. executives the field from which gas would be piped to Detroit contains 20 trillion feet of gas, enough to supply the cities already piping gas, and Detroit, for 75 years.

SAM FORDYCE LINE

BROWNSVILLE, Tex., June 15.—A contract for construction of an 85-mile oil pipe line from the new Hidalgo County pools at Sam Fordyce and Mercedes to Brownsville and Port Isabel has been awarded to the Hope Engineering Co. of New York, it was announced by the headquarters of the Cortez Oil Corp. at Mission. The company is headed by B. F. Weekley. The line is estimated to cost $500,000.

Two engineers have arrived in the valley to start surveys for the line, which will be 6⅝-inch and of welded construction. Its capacity is figured at 11,000 bbls. daily.

In charge of the construction will be L. C. Doney, Jr., and William J. Colegrove, both of Houston and New York City, who have been engaged in pipe line construction for 10 years. Mr. Doney was formerly chief engineer for the Moody-Seagraves interests and is consulting engineer for Edgar H. Stapper & Co, New York City financial house.

A complete gathering system in the Sam Fordyce Field, storage facilities and a primary pumping station will be built at the field. A second or "booster" station will be built about midway between the field and tidewater, probably south of Mercedes. At both ports will be storage tanks and terminal facilities for loading.

MICHIGAN CONSTRUCTION

MUSKEGON, Mich., June 17.—Simrall Pipe Line Co. has completed its 28-mile 6-inch welded line from the Crystal Field, Montcalm County, to the Roosevelt refinery in Mount Pleasant.

Construction has been started by Daniels and Mast on 16 miles of 4-inch welded line from the Crystal area to the Midwest Refining Co. plant at Alma.

Pipe is on the ground and ditching has been started by Consumers Power Co. for a 30-mile extension of its main line from the Broomfield Township, Isabella County, gas field to the Millbrook-Belvidere-Hinton Townships Pool on the line between Montcalm and Mecosta Counties.

H. L. Gentry, of Mount Pleasant, has been awarded a contract for several miles of gathering lines to be laid by the Petroleum Transportation Co., a Michigan corporation, formed by half a dozen producers, including Michigan Exploration Co., of Muskegon, to deliver the gas to the Consumers line. The Consumers company will spend about $175,000 and the Transportation company about $30,000. The system will be completed by September 1 when gas will be transported to Saginaw, Bay City, Midland and intervening communities. The producers will receive 12 cents per 1,000 feet and the power company will pay the gathering line operators 15 cents per 1,000 feet.

PIPE CONTRACT LET

A contract for 13,500 tons of 8⅝-inch pipe has been let by the Keystone Pipe Line Co. (Atlantic) to the National Tube Co. for the construction of 180 miles of line in extending the gasoline pipe line system from Mechanicsburg, near Harrisburg, to Pittsburgh, Pa. H. C. Price, Inc., of Bartlesville, Okla., has a contract for electric welding of the line.

RECONDITIONING WORK

Western Gas Co. is reconditioning 9 miles of 16-inch line on its New Mexico-El Paso trunk line.

Memphis Gas Co. is taking up and reconditioning 24 miles of 18-inch gas line between Greenville and Memphis, on its Monroe-Memphis trunk line. N. A. Saigh Co. has the contract.

West Texas Wildcats

(Continued from Page 40)

Sec. 14, Blk. 44, Twp. 1s, T.&P. Sur. Elev. 3,100 ft.; set csg. 156 ft.

Phillips Pet. Co. and Pure Oil Co.'s No. 2 C. Cowden, 440 ft. from S and W. Sec. 23, Blk. 44, Twp. 1s, T.&P. Sur. Rigged up rotary.

EL PASO COUNTY

Tri-State Oil Co.'s No. 1 Kinkel, 190 ft. from N and 550 ft. from E, Sec. 237, A.T.&S.F. Sur. S.D. 225 ft.; setting csg.

FISHER COUNTY

George Callihan et al's No. 1 Herring, 2,310 ft. from S and 330 ft. from W lines of Sec. 192, Blk. 1, B.B.B.&C. Sur. Elev. 1,804 ft.; T.D. 3,113 ft.; pulling 10-in. csg.

Russ Petroleum Co.'s No. 1 Reynolds, 550 ft. from S and 420 ft. from E of SW ¼ Sec. 3, Blk. R, W. E. Richardson Sur. Elev. 1,832 ft.; drlg. 2,930 ft.

Tide Water Oil Co. et al's No. 1 W. E. Hittson et al, 1,320 ft. from N and 660 ft. from W, Sec. 177, Blk. 3, H.&T.C. Sur. Elev. 1,871 ft.; drlg. 2,425 ft.

GARZA COUNTY

N. L. Richards' No. 1 Sullivan, 330 ft. from N and W. Sec. 3, Blk. 5, K. Aycock Sur. Elev. 2,534 ft.; T.D. 2,940 ft.; acidised; tesing.

GLASSCOCK COUNTY

John I. Moore et al's No. 1 J. S. McDowell,

1,980 ft. from N line and 660 ft. from E line of Sec. 22, Blk. 34, Twp. 2s, T.&P. Sur.
Topped lime 9,471 ft.; show oil and gas 9,484-9,520 ft.; increase oil 9,594-9,600 ft. and 9,633-55 ft.; T.D. 9,946 ft.; opened this week and made one 50-bbl. head into slush pit; to deepen.

HOWARD COUNTY

Clay Bros. & White's No. 1 Read, 330 ft. from S and 1,650 ft. from W, Sec. 46, Blk. 30, Twp. 1n, T.&P. Sur.
T.P. 2,635 ft.; T.D. 2,782 ft.; preparing to pump.
Eastland Oil Co.'s No. 1 D. H. Snyder, SW cor. Sec. 28, Blk. 30, Twp. 1s, T.&P. Sur. Machine.
John I. Moore et al's No. 1 Snyder, 330 ft. from S and W, Sec. 28, Blk. 30, Twp. 1s, T.&P. Sur.
Elev. 2,302 ft.; fishing 1,835 ft.
Iron Mountain Oil Co.'s No. 6 Reed, 330 ft from S and W lines of Sec. 46, Blk. 30, Twp. 1n, T.&P. Sur.
Pumped 304 bbls. in 11 hrs.; T.D. 2,794 ft.
Texas Co.'s No. 10 Schalk, W half Sec. 18, Blk. 19, Lavaca Navigation Co. lands.
Drlg. 976 ft.
Wooten's No. 1 Blank, NW ¼ Sec. 46, Blk. 30, Twp. 1n, T.&P. Sur.
Location.

JEFF DAVIS COUNTY

C. M. Joiner's No. 1 Jones & Coffield, 770 ft. from N and 1,322 ft. from E. Sec. 8, Blk. 3, H.&T.C. Sur.
T.D. 1,260 ft.; U.R. csg.

JONES COUNTY

Campbell et al's No. 1 Rowell, in E half of W half, Sec. 6, T.&P. Sur.
Drlg. 1,380 ft.
Campbell et al's No. 1 Enevill, 1,400 ft. from N and 270 ft. from W, Sec. 2, M.E.&P. Sur., ½ mile S of Anson.
Drlg. 2,500 ft.
R. L. Crawford's No. 1 Wattzer, 200 ft. from S and W, Sec. 1, T.&N.O. Sur.
Location.
A. B. Farris et al's No. 1 J. W. Jennings, 1,980 ft. from S and 660 ft. from E, Sec. 207, B.B.B.&C. Sur.
Drlg. 50 ft.
Moutray & King's No. 1 R. Prichard, 400 ft. from N and 200 ft. from W, Sub. 1, G. Martinez Sur., 5 miles N of Hawley.
Drlg. 1,253 ft.
Sandy Ridge Oil Co.'s No. 3 Jones, 1,520 ft. from N and 660 ft. from W, Sec. 5, Blk. 15, T.&P. Sur.
Location.
Ungren & Frazier et al's No. 1 Steele, 1,450 ft. from S and 200 ft. from W lines of Sec. 8, Blk. 10, Allen Sur.
Drlg. 1,976 ft.
Ungren & Frazier's No. 1 King Ranch, 200 ft. from N and E of NW half, Blk. 5, M. Bueno Sur.
Drlg. 1,600 ft.

KIMBLE COUNTY

Wilcox Oil & Gas Co.'s No. 1 J. Patterson, 200 ft. from N and E, Sec. 1, D.&P.R.R. Sur.
S.D. 610 ft.

LOVING COUNTY

D. C. Evans' No. 1 W. D. Johnson, 2,310 ft. from N and 1,650 ft. from W, Sec. 12, Blk. 57, Twp. 1, T.&P. Sur.
S.D. 2,170 ft.
Mason Oil Co.'s No. 1 Kyle, 1,980 ft. from S and E, Sec. 22, Blk. 55, Twp. 1, T.&P. Sur.
Drlg. 2,106 ft.

LYNN COUNTY

Hart Oil Co.'s No. 1 Edwards, 220 ft. from N and 200 ft. from W of SE Sec. 25, L.&S.V. Sur.
Elev. 3,112 ft.; T.D. 4,817 ft.; S.D. 4,817 ft.

MARTIN COUNTY

Wright & Scott's No. 1 Flannigan, 330 ft N and E, Sec. 22, Blk. 37, Twp. 1s, T.&P. Sur.
S.D. 100 ft. for csg.

MITCHELL COUNTY

Sawtell & Grueber's No. 1 Morrison.
Drlg. 1,476 ft.
Texas Co.'s No. 1 Terry, 300 ft. from S and 1,650 ft. from E of W 485 acres, Sec. 62, Blk. 29, W.&N.W. Sur.
Drlg. 350 ft.

PECOS COUNTY

Adams et al's No. 2 Masterson, 1,630 ft. from SE and 330 ft. from SW, Sec. 104, Blk. 10, H.&G.N. Sur.
T.D. 732 ft.; set csg.
Cardinal Oil Co.'s No. 1 White & Baker, 150 ft. S and E lines of "E" lease, Sec. 40, Blk. 194, G.C.&S.F. Sur.
Elev 2,713 ft.; T.D. 1,790 ft.; P.B. to 1,784 ft.
Gulf Prod. Co.'s No. 6 White & Baker, 330 ft. from N and W, Sec. 94, Blk. 194.
Elev. 2,847 ft.; drlg. 645 ft.
W. Hicks' No. 1 Fromme, 1,980 ft. from NE and 2,310 ft. from SE, Sec. 106, Blk. 10, H.&G.N. Sur.
Location.
C. R. Richards' No. 4 Courtney, 920 ft. from N and W, Sec. 78, Blk. OW, 360 ft. S of No. 2.
Elev. 2,967 ft.; C.O. 220 ft.
Samwan Oil Co.'s No. 2 Masterson, 330 ft. from W and 990 ft. from S lines of Sec. 104, Blk. 10, H.&G.N. Sur.
Drlg. 800 ft.
Trans-Tex. Oil Co.'s No. 1 Caldwell, 330 ft from E line and 330 ft. from S line of Sec. 27, Blk. 40, Twp. 9, T.&P. Sur.
T.D. 2,380 ft.; C.O.

REAGAN COUNTY

Dobbs No. 1 Friend, 2,310 ft. from S and 660 ft. from W of Blk. 3, Wm. Allen Sur., 3 or 4 miles S of Big Lake.
S.D. 2,465 ft.; P.B. 2,464 ft.; bailing out acid.
John Emch's No. 1 E. V. Belcher, 467 ft. from N and 1,402 ft. from E, Sec. 4, Blk. 4¼, G.C.&S.F. Sur.
Drlg. 3,575 ft.
Skelly Oil Co.'s No. 1-D H. S. Grayson, 1,980 ft. from N line and 660 ft. from W line of Sec. 33, Blk. 8, University Land Sur.
S.D. 9,967 ft.; bridged back to 3,100 ft.; to test.

REEVES COUNTY

Dunigan's No. 1 Davis, 330 ft. from N and W, Sec. 7, Blk. 58, P.S.L. Sur.
Location.
Herbert Oil Co.'s No. 1 Williams & Walker, 5,280 ft. from S and 1,320 ft. from E, Sec. 17, Blk. 6, H.&G.N. Sur.
Elev. 2,536 ft.; drlg. 2,800 ft.
K. Slack et al's No. 1 Reeves, C NW ¼ Sec. 20, Blk. 56, P.S.L. Sur., 22 mi. N of Toyah.
T.D. 425 ft.
Washington Oil Co.'s No. 1 J. M. Radford Grocery Co., 2,640 ft. from S and 340 ft. from E. Sec. 39, Blk. 56, P.S.L. Sur.
S.D. 153 ft.

RUNNELS COUNTY

Dennis et al's No. 1 Wash, 550 ft. from N and 560 ft. from E of W half, Sec. 123, E.T.R.R. Sur.
Shut down.
Melrose Oil Co.'s No. 1 L. P. Woods, 150 ft. from NE lines and 3,475 ft. from W line of survey, Willett Holmes Sur. No. 100.
S.D. 2,507 ft.
R. Wells' No. 1 James, 396 ft. from N and 330 ft. from E of James tract in Sec. 16, D. Diaz Sur.
Drlg. 1,757 ft.
Wolverton's No. 1 Willingham, 200 ft. from river and in C of Wilhelm-Wolfgang Sur. No. 425, 1½ miles SE of Ballinger.
Drlg. 1,172 ft.

SCHLEICHER COUNTY

John M. Cooper et al's No. 1 Bert Page, 1,290 ft. from N line, 1,470 ft. from W line of Sec. 40, Blk. L, G.H.&S.A. Sur.
S.D. 6,156 ft.
W. C. Proctor et al's No. 1 Judkins & Spencer, C SW¼ Sec. 4, Blk. V.28.
Drlg. 560 ft.

SCURRY COUNTY

M. L. Goos et al's No. 1 J. E. Murphy, 330 ft. from N and 1,650 ft. from E, Sec. 114, Blk. 97, H.&T.C. Sur.
Elev. 2,287 ft.; drlg. 1,445 ft.
Magnolia Pet. Co.'s No. 1 J. W. Mooar, 1,630 ft. from N and 990 ft. from E, Sec. 342, Blk. 97, H.&T.C. Sur.
Elev. 2,516 ft.; S.D. 450 ft.
McLaughlin's No. 1 Allen, 1,331 ft. from N and 1,338 ft. from E, Sec. 298, Blk. 97.
S.D. 2,930 ft.

STONEWALL COUNTY

Barnsdall Oil Co.'s No. 1 S. Young, 350 ft. from N and E, Sec. 26, Austin & Williams Sur. 349.
Elev. 1,726 ft.; drlg. 2,655 ft.

SUTTON COUNTY

Paul C. Teas' No. 1 G. S. Allison, 660 ft. from S and W, Sec. 49, Blk. A, G.W.T.&P. Sur.
Location.

TAYLOR COUNTY

Anderson et al's No. 1 J. C. High, 2,310 ft. from N and 990 ft. from E, Sec. 8, L.&L. Sur.
Rigged up.
Skaggs & Brewer's No. 1 McClure, 330 ft. from N and E S half SW Sec. 8, L.A.L. Sur.
Drlg. 1,442 ft.

TOM GREEN COUNTY

Jacobs et al's No. 2 DeLong, 150 ft. from N and 450 ft. from E, James Webb Sur. No. 83.
S.D. 515 ft.
Twin Oil Co.'s No. 1 W. E. Green, 1,050 ft. from N and 1,400 ft. from W, L. P. Moore Sur. 169½.
Drlg. 230 ft.

UPTON COUNTY

T.P. Coal & Oil Co.'s No. 1 Cordova Union Land, 2,406 ft. from E and 330 ft. from N, Sec. 33, Blk. 1.
T.D. 2,235 ft.; P.B. 2,108 ft.; shot; put on pump.
Gulf Prod. Co.'s No. 103 McElroy, 1,980 ft. from S and 660 ft. from W, Sec. 197, Blk. F, C.C.S.D.&R.G.N.G. Sur.
T.D. 12,786 ft.; P.B. to 9,952 ft.; testing.
Humble Oil & Ref. Co.'s No. 1 Pollock, C of NW, Sec. 4, Blk. M.
Drlg. 6,458 ft.
Williams & Williams Drlg. Co.'s No. 1 Robbins, 1,600 ft. from S and 1,900 ft. from E. Sec. 4, G.C.&S.F. Sur.
T.D. 2,080 ft.; rerunning tubing.

WARD COUNTY

Alexander's No. 1 Richter, 1,650 ft. from NW, 1,170 ft. from NE line of Sec. 37, Blk. 34, H.&T.C. Sur.
Drlg. 2,310 ft.
Bradford et al's No. 1 E. R. Allen, 660 ft. from NW line and 551 ft. from NE line, Sec. 11, Blk. 5, H.&T.C. Sur.
T.D. 1,520 ft.; shut down.
Caprito's No. 1 Hardage & Wilson, 2,310 ft. from NE and 990 ft. from SE, Sec. 11, Blk. 34, H.&T.C. Sur.
Machine rigged up.
Eastland Oil Co.'s No. 1 C. D. Mason, 330 ft. from SW and SE, Sec. 14, Blk. 34.
T.D. 997 ft.; U.R. csg.
Gulf Prod. Co.'s No. 58 O'Brien, 330 ft. from E and 1,650 ft. from S, Sec. 18, Blk. F.
Drlg. 1,920 ft.
Gulf Prod. Co.'s No. 57 O'Brien, 2,310 ft. from S and 330 ft. from E, Sec. 18, Blk. F.
T.D. 2,788 ft.; washing.
Magnolia Pet. Co.'s No. 2 Sealy Estate, 2,310 ft. from S and 330 ft. from W, Sec. 42, Blk. F.
T.D. 2,753 ft.; U.R.
Jerry Sines' No. 1 Brown, 330 ft. from NW and NE, Sec. 13, Blk. 5, H.&T.C. Sur.
T.D. 3,148 ft.; P.B. 3,075 ft.; C.O. and swabbing.
West Texas O. & R. Co.'s No. 1-C University, 330 ft. from N and E, Sec. 6, Blk. 16.
Drlg. 2,687 ft.

WINKLER COUNTY

Barnsdall Oil Co.'s No. 1 Brown & Altman, 2,310 ft. from S and E, Sec. 4, Blk. B-5.
Elev. 2,844 ft.; drlg. 3,003 ft.
Emperor Oil Co.'s No. 1 Halley, 1,650 ft. from S and 330 ft. from E, Sec. 12, Blk. B-12.
Elev. 2,764 ft.; drlg. 1,306 ft.
Fox & Butler's No. 1 Brown & Altman, 2,310 ft. from S and 1,650 ft. from E, Sec. 6, Blk. B-5.
Elev. 2,847 ft.; drlg. 2,120 ft.
Green Prod. Co.'s No. 1 J. F. Cross, 330 ft. from N and 2,310 ft. from W, Sec. 4, Blk. B-10, P.S.L. Sur.
Shut down.
Gulf Prod. Co.'s No. 1 Keystone Cattle Co., NE of NW, Sec. 10, Blk. B-3, P.S.L. Sur.
Elev. 2,942 ft.; drlg. 2,650 ft.
Gulf Prod. Co.'s No. 2 Keystone Cattle Co., NW cor. Sec. 17, Blk. B-2.
Elev. 2,951 ft.; coring 3,052 ft.
Gulf Prod. Co.'s No. 3 Keystone Cattle Co., 330 ft. from N and W of NE ¼ Sec. 11, Blk. B-3.
Set csg. 1,182 ft.
Gulf Prod. Co.'s No. 4 Keystone Cattle Co., 330 ft. from N and E, Sec. 20, Blk. B-3.
Drlg. 770 ft.
Gulf Prod. Co.'s No. 5 Keystone Cattle Co., 330 ft. from N and W of SW¼ Sec. 6, Blk. B-2.
Elev. 2,952 ft.; set csg. 1,172 ft.
Gulf Prod. Co.'s No. 6 Keystone Cattle Co., 330 ft. from N and W of NE¼ Sec. 16, Blk. B-2.
Elev. 2,950 ft.; drlg. 1,000 ft.
Gulf Prod. Co.'s No. 7 Keystone Cattle Co., 330 ft. from N and W of SW ¼ Sec. 14, Blk. B-2.
Rigged up.
Gulf Prod. Co.'s No. 8 Keystone Cattle Co., 330 ft. from S and W of Sec. 13, Blk. B-2.
Rigged up.
Gulf Prod. Co.'s No. 9 Keystone Cattle Co., 330 ft. from S and W of Sec. 18, Blk. B-2.
Elev. 2,946 ft.; rig.
Harry Adams' No. 2 Scarborough, 990 ft. from N line and 990 ft. from W line, Sec. 2, Blk. 77, P.S.L. Sur.
Material.
Humble Oil & Ref. Co.'s No. 2-A Walton, 660 ft. from S and W, Sec. 48, Blk. 26, Derrick.
K-D Oil Co.'s No. 1 P. Mitchell, 1,650 ft. from N and 2,310 ft. from E, Sec. 23, Blk. B-10, P.S.L. Sur.
Location.
J. C. Maxwell's No. 1 Brown & Altman, 2,310 ft. from N and 990 ft. from W, Sec. 6, Blk. B-5.
Elev. 2,844 ft.; fishing 2,570 ft.
Mid-Continent Pet. Corp.'s No. 2 Howe, 1,650 ft. from N and 330 ft. from W, Sec. 12, Blk. 26.
T.D. 2,989 ft.; T.P. 2,800 ft.
Richardson's No. 1 Walton, 1,010 ft. from S and 330 ft. from W, Sec. 1, Blk. B-3.
Coring 2,963 ft.
Skelly Oil Co.'s No. 2 Halley, 1,320 ft. from N and 2,200 ft. from E, Sec. 25, Blk. B-11, P.S.L. Sur.
S.D. 3,090 ft.
Skelly Oil Co.'s No. 3 Halley, 2,200 ft. from N and 440 ft. from W. Sec. 16, Blk. B-11.
Elev. 2,746 ft.; derrick.
Sioni Oil Co.'s No. 1 Lowett, 330 ft. from N and E. Sec. 36, Blk. 26, P.S.L. Sur.
Drlg. 2,675 ft.
Sun Oil Co.'s No. 1 Halley, 2,200 ft. from N and 440 ft. from E. Sec. 24, Blk. B-13, P.S.L. Sur.
T.D. 3,160 ft.; to rerun tubing.
Texas Pacific Coal & Oil Co.'s No. 2 Daugherty, 1,650 ft. from S and 330 ft. from E. Sec. 2, Blk. 26, P.S.L. Survey.
T.D. 3,057 ft.; shot; C.O.
Weaver et al's No. 1 T. Morton, 330 ft. from S and E of N half, Sec. 11, Blk. B-12.
Elev. 2,767 ft.; drlg. 1,100 ft.

YOAKUM COUNTY

C. J. Davidson et al's No. 1 Bennett, 1,320 ft. from N and E, Sec. 678, John H. Gibson Sur.
Drlg. 143 ft.

Texas Panhandle Wildcats

Week Ending June 8

CARSON COUNTY

Danube Oil Co.'s No. 1 Byrum, 308 ft. from N and 409 ft. from E of N½ of NE¼, Sec. 107, Blk. 4, I.&G.N. Sur.
Location.
Johnson et al's No. 1 Eller, 330 ft. from N and E, Sec. 200, Blk. 3, I.&G.N. Sur.
Rigged up rotary.
Phillips Pet. Co.'s No. 2 Cooper, 327 ft. from N and 989 ft. from W lines of S½ of SE¼ of Sec. 4, Blk. 9, I.&G.N. Sur.
T.D. 3,075 ft.; shot; C.O.
Robert Watchorn's No. 1 Eller, 330 ft. from S and E lines of W½ and SE¼ of Sec. 9, Blk. 7, H.&G.N. Sur.
T.D. 3,102 ft.; standardizing.
Texoma Nat. Gas Co.'s No. 1 Crutchfield, 1,335 ft. S and 1,328 ft. W, Sec. 37, Blk. 4, H.&G.N. Sur.
Drlg. 1,103 ft.

CHILDRESS COUNTY

Alma Oil Co.'s No. 1 Lowe, 660 ft. from N and W of SW¼, Sec. 417, Blk. H, W.&N. W. Sur., S of Kirkland.
T.D. 5,653 ft.; swbng. oil and wtr.; S.W. increasing in volume and temperature.
Larkins & Warr's No. 1 M. F. Williams, at common corners of Secs. 507, 483, 484 and 508, Blk. H, W.&N.W. Sur.
Drlg. 50 ft.

COLLINGSWORTH COUNTY

T. Hunter et al's No. 1 Hill, 330 ft. S and 180 ft. E. Sec. 19, Blk. 17, H.&G.N. Sur.
Drlg. 2,058 ft.; show gas 1,880-85 ft. and 1,910 ft.; increase at 1,940 ft.
Smith Bros.' No. 1 Pierce, C NE¼ Sec. 107, Blk. 21, H.&G.N. Sur.
Rigged up standard tools.

COTTLE COUNTY

Texas Co.'s No. 8 Johnson, 500 ft. N and 318 ft. W of most northerly cor. of J. A. Smith Sur.
Rig.

DALLAM COUNTY

Eben Warner's No. 1 Jarboe, 1,520 ft. from S line, 415 ft. from W line, Sec. 2, B.&B Sur.
S.D. 3,200 ft.

GRAY COUNTY

Bell O. & G. Co.'s No. 1 Furneaux, 424 ft. from S and E lines of SE¼ of Sec. 110, Blk. B-2, H.&G.N. Sur.
Fishing 2,975 ft.; making ½ bbl. oil per hr.
Clark & Smith's No. 1-B Short, 126 ft. from N and 330 ft. from E of NW 40 acres, Sec. 2, Blk. 1, H.&G.N. Sur.
Location.
Drilling Exploration Co.'s No. 1 Lapoid, 330 ft. S and W, Sec. 141, Blk. 3, I.&G.N. Sur Material.
Tom Doswell's No. 1 Herndon, 330 ft. from S and W lines of SE¼ of SW¼ of Sec. 166, Blk. 3, I.&G.N. Sur.
Rig.
Farliss et al's No. 1 Ball, 330 ft. from S and E lines of NW¼ of Sec. 6, Blk. 3, R.B. Sur.
Drlg. 1,236 ft.
Hagy et al's No. 1 Chadwick, 320 ft. N and E, Sec. 210, Blk. B-21, H.&G.N. Sur.
Location.
Harry Foster's No. 1 Johnson, 330 ft. from N and E lines of Sec. 21, L. L. Erwin Sur.
Spudded and S.D.
Warner's No. 1 Taylor, 330 ft. N and W of SE¼ Sec. 8, Blk. 3, A. W. Wallace Sur.
T.D. 3,116 ft.; to test; 1,300 ft. oil in hole.
Jeffries' No. 1 Sailor, 320 ft. from N and E of E½ of NW¼ Sec. 81, Blk. 3, I.&G.N. Sur.
S.D. 3,354 ft.
McLaughlin et al's No. 1 Baggerman, 330 ft. from S and E of NW¼ Sec. 64, Blk. 3, I.&G.N. Sur.
Rig.
Phillips Pet. Co.'s No. 1 Saunders, 330 ft. from S and 345 ft. from W lines of S½ of NE¼ of Sec. 3, Blk. 1, B.S.&F. Sur.
T.D. 2,918 ft.; top pay 2,885 ft.; shot; putting on pump.
Plains Holding Co.'s No. 1 Morse-Gulf, 330 ft. S and W, Sec. 57, Blk. 25, H.&G.N. Sur.
Material
Vulcan Oil Corp.'s No. 1-A Kinnard, 1,180 ft. from N and 150 ft. from W lines of E½ of SW¼ of Sec. 41, Blk. 25, H.&G.N. Sur.
T.D. 2,533 ft.; shot with 860 qts.; C.O.

HUTCHINSON COUNTY

Barnsdall Oil Co.'s No. 1 Lewis, 330 ft. N and E of W½ of E½, Sec. 7, Blk. 23, B.S.&F. Sur.
Drlg. 580 ft.
Gulf Prod. Co.'s No. 1 Pitcher, 330 ft. N and W, Sec. 19, Blk. M-21, T.C. Sur.
Rig.
Huey et al's No. 1 Christian, 220 ft. from S and 330 ft. from W, Sec. 32, Blk. Y, A.&B. Sur.
T.D. 3,175 ft.; P.B. to 2,996 ft.; est. 6,000,000 to 8,000,000 ft. of gas.
Owl Oil Co.'s No. 1 Moore, 275 ft. S and W of NW 80 acres of NW¼, Sec. 21, Blk. M-21, T.C. Sur.
Drlg. 78 ft.
Phillips Pet. Co.'s No. 1 Daniel Dial, 330 ft. from S and 325 ft. from E lines of Sec. 36, Blk. M-23, T.C.R.R. Sur.
Location.
Power Pet. Co.'s No. 1 Hodges, 660 ft. S and E of most southerly 80 acres of S 160 acres of SE 200 acres, Sec. 16, Blk. M-35, T.C. Sur.
Rig.
Stinnett Oil Co.'s No. 1 Starnes, 330 ft. from N and 275 ft. from W of E½ of NW¼ Sec. 22, Blk. M-23, T.C. Ry Sur.
S.D. 600 ft.
Texas Plains Oil Co.'s No. 1 State, 2,500 ft. SW of SW cor. of Sec. 15, Blk. 47, H.&T. C. Sur., and 330 ft. from N bank of Canadian River.
Spudded and shut down.
Texilvania Oil Co.'s No. 1 Thompson, 440 ft. N and 2,735 ft. E. Sec. 15, Blk. M-23, T.C. Sur.
T.D. 3,027 ft.; putting on pump.

KING COUNTY

Davis, Heydrick et al's No. 1 Masterson, NE cor. Blk. 50, F. P. Knotts Sur.
Drlg. 3,775 ft.

MOORE COUNTY

Alma Oil Co.'s No. 1 Ward, 330 ft. N and W of SW¼, Sec. 63, Blk. 44, H.&T.C. Sur.
Drlg. 1,770 ft.

OCHILTREE COUNTY

U. S. Oil Corp.'s No. 1 W. R. Norris, 330 ft. S and 990 ft. E, Sec. 212, Blk. 43, H. &T.C. Sur.
Rigged up.

RANDALL COUNTY

English et al's No. 1 Oxnard, 350 ft. from N and 1,320 ft. from E lines of NE¼ Sec. 85, Blk. 2, A.B.&M. Sur.
Drlg. 5,669 ft.

WHEELER COUNTY

C. & H. Drlg. Co.'s No. 1 Binkley, 330 ft. from S and W lines of NE¼ of Sec. 25, Blk. 24, H.&G.N. Sur.
T.D. 2,325 ft.; fishing.
Johnson et al's No. 1 Pryor, 330 ft. N and E of E½ NE¼ Sec. 48, Blk. 12, H.&G.N. Sur.
S.D. 2,245 ft.; H.F.W. 2,244-45 ft.
Martin & Dubose's No. 1 Schwarting, 330 ft. from S and 990 ft. from W lines of SE¼ of Sec. 53, Blk. 13, H.&G.N. Sur.
T.D. 2,700 ft.; shot; C.O.
Northern Texas Utilities' No. 1 Cailhon, 330 from N and E of SE¼, Sec. 72, Blk. 13, H.&G.N. Sur.
Rigged up.
Phillips Pet. Co.'s No. 1 Binkley, 330 ft. N and 990 ft. W of W½ of SW¼, Sec. 49, Blk. 24, H.&G.N. Sur.
Drlg. 2,369 ft.
Smith Bros.' No. 1-B Harlan, 330 ft. from N and 990 ft. from W lines of W½ of SW¼ of Sec. 49, Blk. 24, H.&G.N. Sur.
T.D. 2,583 ft.; 400 bbls. oil in 5 days.

East Central Texas Wildcats

(Continued from Page 41)

LEON COUNTY

Killough & Tucker's No. 1 G. W. Lee, center of NE 10 acres of 230-ac. tract, J. Burleson Sur.
Elev. 393 ft.; drlg. chalk 4,925 ft.; top Austin 4,908 ft.

LIMESTONE COUNTY

J. Edward Mills' No. 1 Hunt, 200 ft. from N, 350 ft. from W line 34.75-ac. tract, Israel Wood Sur., 3 miles NE of Kosse.
C.O. at 3,654 ft.

Doughtry et al's No. 1 S. Welch, 150 ft. from NW and 900 ft. from NE of 77.64-acre tract in A. Varilia Sur., 4 miles W of Groesbeck.
Drlg. 3,008 ft.

Y. Rogers' No. 1 J. M. Tidwell, 330 ft. from S and E of 220-ac. tract, P. Varella Sur., 3 miles SW of Mexia.
Derrick.

McLENNAN COUNTY

Mahan et al's No. 1 Mann, 1,100 ft. W of Simms Oil Co.'s No. 1 Mann, Carlos Tampo Sur., W of Robertsonville.
S.D. 7600 ft.

NACOGDOCHES COUNTY

Douglas Exploration Co.'s No. 1 Hayter, 1,-687 ft. from S and 2,582 ft. from W lines of tract, Santos Coy Sur.
Coring 5,010 ft.; chalk.

Morrow et al's No. 1 Mrs. J. J. Holton, 900 ft. from W and 1,200 ft. from S 50-ac. tract, B. Flores Sur., 5 miles E of Nacogdoches.
Drlg. 82 ft.

Morrow et al's No. 1 C. B. Watkins, 150 ft. from N line and 330 ft. from NW lines of 160-ac. tract, 3 miles S of Caro, H. Y. Bailey Sur.
S.D. 4,170 ft.; sbd.

Stebbinger & Baker, trustee's No. 1 Mrs. A. Mattauer, 408 ft. from W and 607 ft. from N of 440-ac. tract, R. Totin Sur., 4 miles SE of Cherino.
Derrick.

NAVARRO COUNTY

Bennett Brothers' No. 1 T. E. Stewart, 150 ft. from NE line of lease, 10 miles SW of Corsicana, Wm. R. Bowen Sur.
T.D. 1,136 ft.; S.D.

R. B. Codding et al's No. 1 Lela Kent, 450 ft. from S line and center of N and S lines of lease, 3 miles NE of Chatfield, C. B. Emmons Sur.
S.D. 1,340 ft.

W. J. Keeling et al's No. 1 J. F. Rushing 434 ft. from N line and 150 ft. from W line of 134-ac. tract, 6 miles SW of Richardson, Henry Ford Sur.
T.D. 2,881 ft.

McCullough et al's No. 1 C. Berry, 330 ft. from SE cor. of 35-acre tract, 1 mile W of Dawson, William Moss Sur.
S.D. 1,152 ft.

E. M. Thomason & Co.'s No. 1 C. Morgan, 340 ft. from W and 520 ft. from N of 100-ac. tract, Wm. Haggard Sur., 1 mile SW of McGlothlin's No. 1 Dobbin.
S.D. 830 ft.

Wiggins et al's No. 1 Donoho, 450 ft. from N and 1,101 ft. from E lines in John Couple Sur., SW of Corsicana.
S.D. 1,439 ft.

RAINS COUNTY

Allen & McClung's No. 1 Giles, T. Cunningham Sur., Abst. 142, 330 ft. from W line and 200 ft. from N line of 105-ac. Giles tract, 5 mi. SW of Emory.
Derrick.

Allen & McClung's No. 1 Ida Bullard, N. Brantely Sur., 1,300 ft. from W line and 200 ft. from N line of 25-ac. tract, 2 mi. SW of Emory.
Derrick.

RED RIVER COUNTY

Joiner's No. 1 D. Rust, C. C. Wilborn Sur., 224 ft. N and 254 ft. W of most southerly SE cor. of Sur., just south of Avery.
Moving in rig.

RUSK COUNTY

Ben Lamb's No. 1 H. Leath, 330 ft. out of NW cor. of 185-ac. tract in L. J. Dooley.
T.D. 4,740 ft.; P.B. to 4,710 ft.; bailing and showing oil.

Richardson's No. 1 Wood.
Top Pecan 3,419 ft.; base Pecan 3,740 ft.; top Austin 4,215 ft.; S.D. 4,351 ft.; ch.

SMITH COUNTY

Cloud et al's No. 1 Dendall, 330 ft. from S and W of 55-ac. tract, J. Williams Sur., 3 miles E of Van Field.
S.D. 1,650 ft.

R. W. Fair et al's No. 1 F. Terrell, 330 ft. out of NE cor. of 72-ac. tract, Eli Delk Sur., 2½ miles NE of Sand Flat.
Drlg. 79 ft.

W. R. Harrison's No. 1 Rushing, J. Herring Sur. (O.W.D.D.).
T.D. 4,330 ft.; set whipstock 4,230 ft.

Sun and Hunt Prod. Co.'s No. 1 E. W. Judge, 330 ft. S and E of 55.5-ac. tract, 3½ miles SE of Tyler.
Base Pecan 3,890 ft.; drlg. 4,035 ft.

TITUS COUNTY

S. Retondi's No. 1 Lillianstun, 1,300 ft. E from NW cor. of J. Bodt Sur. and 330 ft. N, but in W. H. Crawford Sur., 5 miles NE of Talco.
Elev. 361 ft.; derrick.

VAN ZANDT COUNTY

J. H. Foster et al's No. 1 Broucher, 330 ft. out of SE cor. of tract, D. Clapp Sur., 4 miles SE of Willis Point.
Drlg. 2,249 ft.; top Austin 2,014 ft.

J. Beren et al's No. 1 Bryant, 462 ft. N of same operator's dry hole, Nacogdoches County School Land Sur.
S.D. 1,525 ft.

Beren et al's No. 2 Palmer, 544 ft. from S and 466 ft. from E of 69.5-ac. tract, Nacogdoches County School Land.
Standing; T.D. 1,324 ft.

WOOD COUNTY

Atlas Royalty Corp.'s No. 1 J. B. Goldsmith, W. W. Lanier Sur., Abst. No. 358, 466 ft. from W line and 566 ft. from N line of 693.3-ac. tract and survey, 3½ mi. NW of Quitman.
Drlg. 3,959 ft.; top broken Austin 3,807 ft.; top hard 3,835 ft.

Dean Bros.' No. 1 W. H. Finklea, 560 ft. W of W line of J. Hunt Sur., B. Anderson Sur., 2½ miles SW of Yantis.
Elev. 383 ft.; T.D. 2,510 ft.; Pecan Gap 2,262-2,400 ft.

Southwest Texas Wildcats

(Continued from Page 38)

C. C. Raborn's No. 1 A. B. Stephens, 1,630 ft. from N line, 1,540 ft. from W line of tract, P. B. Hayes Sur. No. 3.
Moving in rotary; T.D. 400 ft.; shale.

BLANCO COUNTY

H. T. Roe and W. E. Nixon's No. 1 Polk Morrisey, 2,000 ft. from W line, 1,000 ft. out of SE cor., 1,600 ft. from N line of Thomas H. Webb Sur. No. 91.
Drlg. 100 ft.

CALDWELL COUNTY

Ogden & Reed's No. 1 Mrs. H. Brewer, 1,-000 ft. from NE line, 150 ft. from SE line of tract in Martinez Sur.
T.D. 1,601 ft.; P.B. 1,525 ft.; show oil 1,-474-1,525 ft.; cmtd. 6⅝-in. csg. 1,470 ft.; testing.

DUVAL COUNTY

T. J. & M. Drlg. Co.'s No. 1 Davidson, 2,-770 ft. S line, 330 ft. W line of Sur. 90.
Drlg. 1,451 ft.

Intrepid Oil Co.'s No. 2 Parr, 330 ft. from N and W lines of 80-ac. tract, Sur. 115.
Temp. S.D. 5,305 ft.; may set csg. on showing had at 4,070 ft.

Magnolia Pet. Co.'s No. 2 Bennett, 887.5 ft. from S line, 664 ft. from E line of Sec. 432, S.K.&K. Sur.
Drlg. 2,010 ft.

J. J. O'Byrne's No. 1 Hall, 330 ft. from S and W lines of Tract 3, Santas Flores grant.
Drlg. 1,500 ft.

FAYETTE COUNTY

Ross Fenton's No. 1 Kasper (263-ac), 3,-000 ft. from NE line, 1,280 ft. from SW line, of Thos. Green Sur. No. 28.
Checking tiffle.

FRIO COUNTY

Midland Oil Co.'s No. 1 Joint Stock Land Bank, 300 ft. from NE and SE lines of 60-ac. tract, B.S.&F. Sur.
Rigging up.

W. T. Shoemaker's No. 1 M. Roche, 150 ft. SW cor. of Carl Wensel Sur. No. 139.
S.D. 3,860 ft.

GOLIAD COUNTY

Keystone Royalty Co.'s No. 1 M. Woods, SW part of county, 15,000 ft. from SW line, 5,000 ft. from NW line of J. Sherman Sur.
Drlg. 4,800 ft.

Turnbull & Irwin's (Walter Taber et al) No. 1 Handley, 370 ft. S, 100 ft. E of NE cor. of 2,400-ac. tract, in Daley Sur.
Coring 2,560 ft.

GUADALUPE COUNTY

Bob Gode et al's No. 1 Hicks, 1,320 ft. from E line, 150 ft. from S line of 189-ac. tract in Santo Y. Coy Sur.
Drlg. chalk 215 ft.

A. D. Locke's No. 1 Lowman, 210 ft. from SE and SW lines of 2,500-ac. tract in C. Campbell Sur.
T.D. 1,510 ft.; drlg. 1,350 ft. in side-tracked hole.

Mineral Oil Corp. of Texas' No. 1 Allen Phillips, 162 ft. from N line, 900 ft. from E line of tract, Cortinos Sur.
S.D. 888 ft.

W. A. Scrutchin's No. 1 A. H. Smith, 150 ft. from E line, 1,350 ft. from N line of 24.5-ac. tract, Jas. B. Cowan Sur.
550 ft.; no report.

J. S. Suttle's No. 2 Baenziger, S of Seguin. Old well; R.U. to W.O.
Suttle et al's No. 1 Baenziger, 700 ft. from S line, 500 ft. from E line of 125-ac. tract, Manuela Sur.
T.D. 2,153 ft.; knocking out bridge.

W. J. Walton's No. 2 Zaboroski, 180 vrs. (500 ft.) SW of No. 1, 190.8 vrs. (530 ft.) S of Guadalupe River, 225-ac. tract, J. D. Clements Sur. No. 14.
Drlg. 1,750 ft.

HIDALGO COUNTY

Bluff Pet. Co.'s No. 1 Porcion Land Co., 330 ft. from N and E lines of NE 100 acres of S 500 acres of Share 14, Por. 49.
Drlg. 700 ft.

E. A. Davis' No. 1 Flores, 65 ft. from N line, 25 ft. from W line, Tract 312, Porcion 38.
Drlg. 2,350 ft.

Downey & Morton's No. 1 Daskom, 450 ft. from E line, 55 ft. from S line of Blk. 24, Por. 45.
T.D. 4,415 ft.; tested S.W.; may recmt. to shut this off.

Nedler & Graham's No. 1 Oscar Daskam, center of Blk. 42, Porcion 45.
Derrick wrecked.

JIM HOGG COUNTY

Darby Pet. Co.'s No. 1 Holbien, 330 ft. out of SW cor. of Lot 57, Sur. 5, Los Animas grant.
Drlg. 2,325 ft.

Miller & Pippin's No. 1 Yeager, 527 ft. S line, 150 ft. E line of Blk. 6, Sur. 20.
Fishing 3,530 ft.; no report.

A. W. Phillips' No. 1 Allen, 660 ft. from S and E lines of Blk. 293, Pippin Subd. of the Randado grant.
Moving in material.

Sun Oil Co.'s No. 1 L. R. Brooks, 7,500 ft. from N and W lines of tract, Santo Domingo de Abajo grant.
Drlg. 1,535 ft.

JIM WELLS COUNTY

Sunray Oil Co.'s (A. M. Hagan) No. 1 Robert Adams, 330 ft. N and E of SW cor. Sec. 16, M. Ruiz Sur.
R.U.; completing wtr. well.

Smith & Story's (Maer & Shira) No. 1 Schaefer, 1,320 ft. E of NW cor. center of Blk. 15, of subdivision of ranch.
S.D. 5,502 ft.

KARNES COUNTY

Jim Kendrick's No. 1 Radford, J. Pointevent Sur. on the Seegter tract.
Coring 3,645 ft.

W. C. McBride's No. 1 Boultinghouse, 643 ft. from SE line, 618 ft. from SW line of J. S. Menefee Sur.
Drlg. 1,210 ft.

Harry Sample's No. 1 Seeger, 330 ft. from W line, 330 ft. SW of road, J. Pointevent Sur.
Drlg. 2,780 ft.

R. G. Tonkin's No. 2 Henke, 3,670 ft. from SW cor., 330 ft. from W line (location changed).
Location site cleared and pits completed.

KENDALL COUNTY

J. E. Freeman's No. 1 J. M. Gerfers, 1,200 ft. out of SW cor. of 119-ac. tract, Mark Hodgson Sur., Sec. 796.
Drlg. 100 ft.

KERR COUNTY

Emerald Oil Co.'s (Meteor Oil Co.) (Edmiston & Walker) No. 1 Whitworth, 1,160 ft. from S line and 1,333 ft. from E line of Sec. 1,429 of the H.E.W.T. Sur.
S.D. in lime 300 ft.

G. F. Schreiner et al's No. 3 Jeff Love, 1,-500 ft. SE of No. 1 and 1,530 ft. from SE cor. and 300 ft. from N line of Sec. 1,591.
T.D. 5,625 ft.; porous lime; S.W. 5,623-25 ft.; S.D.

KLEBERG COUNTY

Parr & Ponder's No. 1 Sam Michalk et al, 5 miles SE Kingsville.
S.D. 1,050 ft.

LASALLE COUNTY

Killingsworth Oil Co.'s No. 1 Yeager, Sur 94.
T.D. 2,012 ft.; sand 1,499-1,710 ft.; cmtd. csg.; standing.

LEE COUNTY

Jas. E. Pederson's No. 1 Turner, 1,860 ft. from N line, 150 ft. from E line of tract, David Hudson Sur.
T.D. 6,560 ft.; P.B. to 6,150 ft.; preparing to perforate csg.

Scharbach & Stowe's No. 1 Robert Otto.
Sand 2,450 ft.; small show oil; standing.

LIVE OAK COUNTY

Henderson Coquat's No. 1 Reagan, McGloin Sur., E of Nueces River and S of Oakville.
S.D. 1,560 ft.

Henderson Coquat's (Luling O. & G. Co.) No. 1 Rex, 330 ft. from SE and SW lines of 629-ac. tract, C of SW¼ of G.H.&H. Sur., Abst. 197, 3 miles S of Mileska.
T.D. 5,502 ft.; S.D.

Lefevre, Spice & Feitner's No. 1 Carter Inv. Co. (Chappa ranch), 330 ft. from SW cor. NE¼ of Sec. 299, Hooper & Wade Sur.
Coring sand 3,100 ft.

Ray Nixon's No. 1 Chamberlain, 3,150 ft. from E line, 950 ft. from N line of Sec. 107, William Hill Sur.
Location.

J. O. Whittington's No. 1 Little, 1,320 ft. NE of S cor. of M. M. Shipp Sur., 330 ft. N of S line.
T.D. 5,759 ft.; tested a little distillate and about 300 lbs. pressure shut in; standing.

McMULLEN COUNTY

John O. Gibson's No. 1 Mazur & McDowell, 330 ft. from N and W lines, Sec. 19, Blk. 4, H.T.&B. Sur.
Drlg. below surface csg.

J. O. Gibson's No. 1 G. C. West (Lowe), 150 ft. E line, 1,200 ft. S of NW cor. of Lot 1, Blk. 4, H.T.&B. Sur.
S.D. 465 ft.

Henderson Coquat's No. 1 Ezzell, midway N and S lines, 2,000 ft. from SE line, D. R. Fant Sur.
Set csg. 765 ft.; W.O.C.

Howard & Carpenter's No. 1 Jungman, 1,-030 ft. from E line, 950 ft. from S line, Holy Sur.
Testing 980 ft.; no report.

Chas. A. Hall's No. 1 B. C. Claunch, 368 ft. from N line, 160 ft. from E line of 25-ac. tract, Michael Haley Sur.
Location.

Loma Oil Co.'s No. 1 Dickinson, Sparks Sur., 880 ft. from E line, 880 ft. from NW line of Farm 13, 160-ac. tract, James Dickinson Subd. of McCowen ranch.
Drlg. rock 500 ft.

Points et al's No. 1 Fahler, 432 ft. S line, 310 ft. E line of tract, Byrna pasture.
Standing 785 ft.

C. C. Shumway's No. 3 Shiner, 330 ft. out of NE cor. of SE¼ of Sec. 53, C. C. Shumway Subd.
S.D. 1,650 ft.

MEDINA COUNTY

Joe Dupree's No. 1 Batto, 258 ft. from E line, 957 ft. from N line, J. Ball Sur. No. 1,478.
Shale 452 ft.; no report.

O. L. Gates and H. W. Hill, Jr.'s No. 1 Odom, 800 ft. from W line, 600 ft. from N line of H. Castro Sur. 174.
Spudded.

W. T. Shoemaker's No. 1 Noonan, 52.5 ft. S 2 deg. 20 ft. E of old well, Sec. 249, M. Simon Sur.
T.D. 445 ft.; cmtd. 8-in. csg. 300 ft.; R.U. rotary.

REAL COUNTY

H. J. Heartwell et al's No. 2 Mrs. M. S. Perry, 250 varas from NW line, 775 varas from SW line of A.B.&M. Sur. No. 175.
Drlg. 3,220 ft.

SAN PATRICIO COUNTY

Masterson et al's (Tom Graham) No. 1 Wurzbach, 330 ft. from W line, 4,350 ft. from S line of C. C. Hornsby Sur.
Standing 5,531 ft.

STARR COUNTY

Accumulated Royalties' No. 1 Ferry, Lot 8, Blk. 2, B.&B. Subd., Por. 86.
Drlg. 635 ft.

Armstrong, Emmanuel & Adams' No. 1 S.C. C.C., 330 ft. from S and E lines of Blk. 57, Porcion 88-89.
T.D. 2,740 ft.; hole swbd. dry; P.B. to 2,-240 ft.; to perforate.

C. R. Borah's No. 1 A. Guerra, San Jose grant, 330 ft. from N and 150 ft. from E lines of Sec. 6 (NE part of county).
S.D. 3,300 ft.

John H. Clopton's No. 1 Mrs. A. M. Kelsey-Bass, 2,950 ft. from W line, 3,610 ft. from E line of Porcion 88 in Porcion 86, Jurisdiction of Camargo.
Drlg. 150 ft.

Henshaw Bros.' (Sunray Oil Co.) No. 1 Sanchez, 330 ft. from NE and NW lines of 40-ac. tract, Sur. 344.
1,100 ft.; no report.

Hiram Reed's No. 1 Block Bros., Tract A-31, Porcion 80, Blk. 4.
S.D. 1,540 ft.; oil sand 1,490-1,501 ft.

WEBB COUNTY

Mills Bennett's No. 1 Jesus Lopez, Jr., 1,-500 ft. S line, 1,320 ft. W line of Sur. 71.
Sand 2,121-26 ft.; est. good for 25,000,000 ft. of gas with odor of oil; coring deeper.

Payne et al's No. 1 Hoggtorp, 450 ft. from SE line, 300 ft. from NE line, Blk. 5, Sur 1,110, W of Oilton.
Abd. 1,982 ft.

Arthur H. Wray's No. 1 Geo. Stuempke, Share 1, Brewster pasture, Galan grant.
S.D. 1,125 ft.; moving in electric rig; (corrected depth).

WILLACY COUNTY

W. T. Daniel's No. 2 Armendiaz, near Rio Hondo, 7,798 ft. from E and W lines of Share 14.
S.D. 2,770 ft.

Kingwood Oil Co.'s No. 1 Santa Rosa, Inc. 160 ft. from E line, 637 ft. from S line of Sec. 30, Blk. 16, Share 44, San Juan de Carricitas grant.
Drlg. 3,220 ft.

WILLIAMSON COUNTY

Fuchs & Walters' No. 1 S. Allmon, John Bevil Sur. No. 56, 150 ft. from SW line, 300 ft. most westerly SW line of 264-ac. tract.
Fishing 93 ft.; hole caving; S.D.

H. L. Goff et al's No. 1 Alberta Klotz, 1,-700 ft. from N line, 150 ft. from E line of 100-ac. tract, W. Cartwright Sur.
S.D. 1,250 ft.; may drill to Edwards.

Hays et al's No. 1 Pfluger, 150 ft. from E line, 150 ft. from S line, White Sur.
S.D. 915 ft.

Rue et al's No. 1 Chas. Bachmayer, 6 miles SE Taylor.
Rigging up.

ZAPATA COUNTY

F. H. Crow et al's No. 1 Daniel Ysaguirre, 330 ft. out of SW cor. Share 1, Porcion 14-15-16, D. Ysaguirre tract.
Coring 3,265 ft.

Danvers & Harrison's No. 1 D. A. McAskill, 660 ft. SE and SW lines, Blk. 51, Edwards Subd., Borrego grant.
Set and cmtd. csg. 20 ft.

Humble O. & R. Co.'s No. 1 Eulalie Domingues, 12,785 ft. from NE line, 1,320 ft. SE line of Por. 31.
Rigging up.

Joe Palmer's No. 1 Emma A. Markrud, 150 ft. from NE and NW lines, Blk. 22, Sur. No. 616.
Rigging up.

Texas Royalty Investment Co.'s No. 1 N. J. Vela, 686 ft. from NE line, 300 ft. from NW line, Blk. 7, Por. 29.
S.D. 2,338 ft.

Southwest Texas Proven

Week Ending June 15

CARROLL—BASTROP COUNTY

Nelson Puett's No. 5 Carroll Estate, 1,926 vrs. (5,350 ft.) from NW line and 619.20 vrs. (1,720 ft.) from SW line of Andrew Mayes Sur. No. 19.
Shale 926 ft.; no report.

CEDAR CREEK—BASTROP COUNTY

J. E. Mills' No. 2 H. H. Lytton, 225 ft. NW line, 825 ft. SW line, 320 acres, J. A. Navarro Sur.
Shale 1,501 ft.; set csg.; W.O.C.

BATEMAN—BASTROP COUNTY

Batts & Jarnson's No. 1 Mrs. Anneta Harris, 576 vrs. (1,600 ft.) NW line, 630 vrs. (1,750 ft.) SW line, John Maxmilian Sur. 22.
S.D. 300 ft.

CAESAR—BEE COUNTY

El Toro Oil Co.'s No. 1 J. J. Grisson, 150 ft. from N and W lines of 10-ac. tract, P. B. Early Sur.
Spudded; no report.

McAlester Fuel Co.'s No. 2 W. J. Vaughn, 150 ft. from SE line, 300 ft. from SW line of 52.37-ac. tract, P. Lewis Sur.
Drlg. 2,000 ft.

Swiger et al's No. 4 Gardner, W offset to Vaughn producer.
Moving in material.

DIRKS—BEE COUNTY

Dirks-Wrightsman's No. 3 Roth, 330 ft. from N line, 990 ft. E of No. 2, Sec. 7, J. M. Uranga grant.
Drlg. 3,000 ft.

Dirks-McMurray's No. 3 R. C. Harris, 660 ft. SW of No. 1, 405 ft. NE of SW line of 44.64-ac., J. L. Dugat Sur.
Drlg. 2,700 ft.

L. A. Douglas' No. 1 Imogene Hall, 900 ft. from SE line, 330 ft. from SW line of 80 acres, T. J. Butler Sur.
Rigging up.

Humble O. & R. Co.'s No. 1 Shellenberger, E offset to Mills Bennett's No. 3-A Bassinger.
Moving in.

Home Oil Co.'s No. 3 Bassinger, 330 ft. from E line, 660 ft. due S of No. 2, Sec. 7, J. M. Uranga grant.
Pettus 3,500 ft.; tested oil.

Texas Co.'s No. 2 Young, 330 ft. from S line, 682 ft. due W of No. 1, Geo. Young Sur.
Derrick.

PETTUS—BEE COUNTY

L. T. Barrow's No. 3-A McKinney, S 65 deg. E 1,500 ft. from No. 3-A.
1,200 ft.; no report.

United Prod. Co.'s No. 50 Ray, approx. 2,-100 ft. northwesterly from NW cor. of Pierce Miller Sur., thence 540 ft. south-

westerly at R/A; also 4,825 ft. SE from NW property line of lease, Geo. A. Kerr Sur.
Drlg. 3,800 ft.

RAY—BEE COUNTY

Dirks Bros.' No. 3 Ray, 660 ft. E of No. 2 and W road to Pettus in SW¼ of Sec. 7.
Drlg. 1,800 ft.
Dirks Bros.' No. 2 Ray.
Sand 3,931-35 ft.; I.P. 250 bbls. per day; ¼-in. choke.
Magnolia Pet. Co.'s No. 1 Geo. Ray, 150 ft. from E line, thence 1,220 ft. from S along E line to NW line of survey, W. B. Blanchard Sur.
Rigging up.

TULETA—BEE COUNTY

Dirks Bros. et al's No. 1 Campbell, 150 ft. from NW line, 330 ft. from SW line of 20-ac. tract, Brooks & Burleson Sur.
Set csg. in saturated sand 2,935 ft.; W.O.C.
Highland Oil Co.'s No. 2 P. L. Campbell, 330 ft. from NW line and SW line of 40-ac. tract, W. B. Blanchard Sur.
Set csg.; sand 2,942-54 ft.
Jamison & Byron's No. 2 Campbell, Blanchard Sur.
Drlg. 2,120 ft.
Mills Bennett Prod. Co.'s No. 1-B C. W. Bassinger, 256 ft. from W line, 330 ft. from S line of SE¼ of NW¼ of Sec. 7, Ragley Subd., Uranga grant.
Derrick.
Leslie McKay's No. 3 Campbell, 150 ft. from E line, 330 ft. from S line of W½ of Blk. 21, Brooks & Burleson Sur.
Sand 3,942-47 ft.; comp. but not gauged.
Southwest Exploration Co.'s No. 1 Heyden & Bruckhan, C of farm tract, 330 ft. from N and W lines of Sec. 20, Uranga grant.
Rigging up.
Texas Co.'s No. 1 Young, 2,175 ft. W, 330 ft. N of SE cor. of T. J. Butler Sur.
Sand 3,853-65 ft.; jetting 10 bbls. an hr.
Wrightsman Oil Co.'s No. 1 Kimball, 1,300 ft. from NW line, 1,500 ft. from NE line, S. Winship Sur.
Completing 3,542 ft.

DOBROWOLSKI—BEXAR COUNTY

D. C. Pegg and B. Miller's No. 7 Katie Strunk, 291 ft. from SW line and 304 ft. from NE line, 139.65-ac. tract, Juan Montes Sur.
Rig.

VON ORMY—BEXAR COUNTY

T. and C. Owens' No. 1 Trawalter, 150 ft. W of river, 150 ft. from S line of tract No. 15, A. G. Trawalter Subd.
Spudded; no report.
Joe H. Parker's No. 1 James McClosky, 1,500 ft. N line, 475 ft. W line, F. A. Desaffre Sur. No. 134.
Drlg. 460 ft.
A. J. Trawalter's No. 11 fee.
Moving in material.

BRUNER—CALDWELL COUNTY

Dawn Oil Corp.'s No. 2 Floyd Tiller.
Derrick.

DUNLAP—CALDWELL COUNTY

O. B. Cunningham's No. 1 J. M. Pierce, 150 ft. from S and W lines of tract in S. Seale Sur.
Testing 2,269 ft.
Exploration Co.'s (F. Meyers) No. 1 W. T. Mooney, 810 ft. from S line, 450 ft. from W line of 95-ac. tract, S. Seal Sur.
Show oil 2,150 ft.; setting csg.
Bellard & Whiting et al's No. 1 Mrs. A. C. Bridges et al, 650 ft. from NW line, 460 ft. from NE line of Soloman Seal Sur.
Shale 635 ft.; no report.
W. F. Moseley's No. 1 J. M. Pierce.
T.D. 2,242 ft.; chalk; 6⅝-in. csg. 2,050 ft.; drilled plugs; bailing; no report.
W. T. Walker's No. 3 Walker, 330 ft. SE of No. 2.
Moving in.
W. T. Walker's No. 2 Walker, 300 ft. SW No. 1, 150 ft. NW line, 47-ac. tract, S. Seale Sur. No. 3.
T.D. 2,185 ft.; comp. for a good well.

GOVERNMENT WELLS POOL—DUVAL COUNTY

Georgia F. Hill's No. 1 W. J. Nester, 357.38 ft. from E line, 353.55 ft. from S line of SE¼ of NE¼ of Sec. 47.
T.D. 2,276 ft.; sand 2,263-76 ft.; set csg.; W.O.C.
Kane Prod. Co. et al's No. 1 Peters, 990 ft. W line, 330 ft. N line of SE¼ of Sur. 176.
Rigging up.
Magnolia Pet. Co.'s No. 2 Hahl, 330 ft. from N line, 1,395 ft. W of No. 1, 640-ac. tract, Sec. 67, C.C.S.D.&R.G.N.G. Sur.
Drlg. 1,110 ft.
Magnolia Pet. Co.'s No. 46 D.C.R.C., 2,310 ft. from W line, 2,970 ft. from S line of Sur 208, 660 ft. due W of No. 45, 660 ft. due N of No. 30, 1,120-ac. tract, J. Poitevent Sur.
T.D. 2,214 ft.; sand 2,210-14 ft.; W.O.C.
Magnolia Pet. Co.'s No. 45 D.C.R.C., 2,970 ft. from S line, 2,310 ft. from E line, Sur. 208, J. Poitevent Sur., 660 ft. due W of No. 44, 660 ft. due N of No. 31 (1,120-ac. tract).
Sand 2,319-21 ft.; T.D. 2,342 ft.; I.P. 75 bbls. per day, on pump.
Magnolia Pet. Co.'s No. 1 Riggs, 330 ft. from N and W lines of NE¼ of NE¼ Sur. 46. 2,353 ft.; putting on pump.
Magnolia Pet. Co.'s No. 12 Riley, 990 ft. W line, 1,650 ft. S line of SW¼ of Sur. 45. 660 ft. due W of No. 5, 660 ft. due N of No. 11, J. Poitevent Sur.
Sand 2,189-93 ft.; coring 2,243 ft.
Parr Oil Corp.'s No. 3 R. E. Glover, 330 ft. from N and E lines of SE¼ of SE¼ of Sec. 44, J. Poitevent Sur.
Location.
G. G. Porter's No. 3 Smith, 330 ft. from N and E lines of NW¼ of NE¼ of Sur. 46.
T.D. 2,342 ft.; I.P. 75 bbls. per day, on pump.
Simpson-Fell Oil Co. et al's No. 8 L. B. Moody, 990 ft. from N line, 330 ft. from E line of 100-ac. tract, G.B.&C.N.G. Sur. No. 60.
Rigging up.
E. R. Thomas' No. 1 C. W. Hahl, 330 ft. out of SE cor. of 165.5-ac. tract, SE¼ of Sec. 63, J. Poitevent Sur.
Drlg. 2,000 ft.

SARNOSA—DUVAL COUNTY

Sun Oil Co.'s No. 10 Cuellar Motor Co., 990 ft. SE line, 1,650 ft. NE line of E½ of Sur. 576.
Spudded.
Sun Oil Co.'s No. 9 Cuellar Motor Co., 990 ft. from NE line, 990 ft. from SE line of Sec. 576, B.S.&F. Sur.
Sand 2,397-4,404 ft.; T.D. 4,421 ft.; I.P. 70 bbls. per day.

HOFFMAN—DUVAL COUNTY

Bridwell Oil Co.'s No. 3 Sutherland, 1,650 ft. from E line, 990 ft. from S line, of E½ of Sur. 122.
Rigging up.
Conway & Butscher's No. 2 Hoffman, 330 ft. S, 335 ft. E of SW cor. of Sur. 120 in Sur. No. 114.
Abd. 3,014 ft.

LOMA NOVA—DUVAL COUNTY

Al Buchanan's No. 5 Ruiz, 660 ft. due W of No. 3, 660 ft. due N of No. 2, 162-ac. tract, Sec. 73, J. Pointevent Sur.
Cored sand S.O. 2,675-84 ft.; no report.
Al Buchanan and Blanco's No. 4 Ruiz, 660 ft. W of No. 2, 330 ft. from S line, Sec. 73, J. Poitevent Sur.
T.D. 3,116 ft.; sand 2,708-15 ft.; jetting 100 bbls. per day.
Byrd & Campbell's No. 7 P. T. Wright, 330 ft. from S and E lines of 132.5-ac. tract, Blk. 10,468, Sur. No. 101.
T.D. 3,640 ft.; sand 2,520-36 ft.; completed large gas well with 950 lbs. pressure.
Duval Oil Co.'s No. 1 Hubbard, Morris & Cummings Sur., Sec. 77, 330 ft. out of NE cor. NE¼ section.
Rigging up.
Frank J. Gravis' No. 1 Byland, 330 ft. from N and W lines of Blk. 4, Sur. 78.
Sand 2,584-96 ft.; I.P. 30 bbls. per hr. on ⅝-in. choke.
Humble O. & R. Co.'s No. 1 Hubbard, B.S. &F. Sur. No. 84, 330 ft. from S line, 810 ft. from E line of 320-ac.
S.D. 2,775 ft.
Humble O. & R. Co.'s No. 2 Welder, 330 ft. from W line, 660 ft. from S line of 250.8-ac., Sec. 73, S.K.&K. Sur.
Swbng. 2,698 ft.
Humble O. & R. Co.'s No. 5 G. Ruiz Est., 1,497.4 ft. S of No. 4, 1,722 ft. W of No. 2, 330 ft. out of SW cor. of 640-ac., Sec. 553, B.S.&F. Sur.
Waiting on csg. 2,766 ft.
Stieren Oil Co.'s No. 2 Wright, Sur. 72.
Testing sand 2,705 ft.
E. R. Thomas et al's No. 1 C. W. Hahl, J. Pointevent Sur., Sec. 63, 330 ft. out of SE cor. of SE¼ section.
Drlg. 2,000 ft.

SEVEN SISTERS—DUVAL COUNTY

Dulce Oil Co. and Henderson & Harvey's No. 1 Serna, 150 ft. from E line, 330 ft. from N line of NW¼ of Sec. 384.
S.D. 2,122 ft.
Humble O. & R. Co.'s No. 1 Bank of Fredericksburg (Wright), 1,645 ft. from S line, 990 ft. from E line, Sur. 382.
Derrick.
Humble O. & R. Co.'s No. 1 Smith, 990 ft. from NW line, 330 ft. from E line of 531.7-ac. tract, Sec. 382, B.S.&F. Sur.
Drlg. 1,500 ft.
Santa Clara Oil Co.'s No. 2 J. F. Welder heirs, 330 ft. from N line, 990 ft. from E line, 660 ft. due W of No. 1, Sec. 385, J. Poitevent Sur.
Spudded.

PEARSALL—FRIO COUNTY

Amerada Pet. Corp.'s No. 1 Kathman, 500 ft. from N and W lines of B. L. Crouch Sur.
Drlg. 100 ft.
Amerada Pet. Corp.'s No. 1 W. H. Smith et al, 4,500 ft. from NE line, 1,650 ft. from SE line, Joseph V. Mason Sur. No. 322.
Drlg. 5,100 ft.

LULING—GUADALUPE COUNTY

Grayburg Oil Co.'s No. 14 McKean, 700 ft. from No. 13, Cottle Sur.
Standing 1,854 ft.
Grayburg Oil Co.'s No. 15 McKean, 200 ft. from NW line, 150 ft. from SW line, H. Cottle Sur.
Chalk 1,675-82 ft.; 6⅝-in. csg. at 1,675 ft.; showed oil 1,679-82 ft.; drlg. plug.
Drlg. plugs 1,789 ft.

DARST CREEK—GUADALUPE COUNTY

Texas Co.'s No. 2 Posey (workover).
Old T.D. 2,606 ft.; set 7-in. csg. at 2,575 ft.; T.D. of sidetracked hole 2,583 ft.

DINERO—LIVE OAK COUNTY

Marine Oil Co.'s No. 1 Adair, 330 ft. from N and W lines of 366-ac. tract in J. McGloin Sur.
S.D. 5,348 ft.

LUCAS—LIVE OAK COUNTY

Houston Oil Co.'s No. 32 Cartwright, 1,124 ft. N of No. 31, Trudo Sur.
5½-in. csg. at 5,304 ft.; preparing to drill plugs at 6,787 ft.

McNEILL—LIVE OAK COUNTY

Lion Oil Ref. Co.'s No. 5 P. E. McNeill, 330 ft. from NW line, 1,350 ft. from SE line of G.H.&H. Sur. in Jane Curry Sur., Blk. 9, Location.
Darby Pet. Co.'s No. 1 McNeill, 330 ft. out of NW cor. of 116-ac. lease, 1,200 ft. SE of Lion's No. 1.
S.D. 4,485 ft.

THREE RIVERS—LIVE OAK COUNTY

Benco Oil Corp.'s No. 1 E. Mahoney, 155 ft. from NW line of J. H. Harvey tract, 3,109 ft. SW of highway in Mark Killelly Sur.
Spudded.
Turner & Walker's No. 1 C. F. Simmons, 50 ft. from N line, 300 ft. from W line, Farm Tract 513, Blk. 12, S. Hayes Sur.
Rigging up.

SAM FORDYCE—HIDALGO COUNTY

Ben G. Barnett et al's No. 2 Missouri Pacific, 1,000 ft. E of W line of right of way.
W.O.C. 2,752 ft.
Cortez Oil Co.'s No. 2-C Smith, 330 ft. from N line, 690 ft. from W line of NE 40 acres of Tract B-3, Porcion 41.
Location.
Cortez Oil Co.'s No. 3-C Smith, 330 ft. from N line, 1,150 ft. from W line of NE 40 acres of Tract B-3, Porcion 41.
Location.
Cortez Oil Co.'s No. 1-C Smith, 330 ft. from N and W lines of NE 40 acres of Tract B-3, Porcion 41.
T.D. 2,755 ft.; killed to drill deeper.
Double D. Oil Co. and Harrison's No. 2 Lula George, 330 ft. from W line, 690 ft. from S line of SW 40 acres of Tract 13, Porcion 41.
Coring 2,945 ft.
Gem Oil Co.'s No. 2-A Seabury, 330 ft. from N line, 307 ft. due W of No. 1, Tract 256, Porcion 38.
T.D. 2,771 ft.; I.P. 55 bbls. per day; ⅛-in. choke; 900 lbs. W.P.
Harrison et al's No. 2 (4) Guerra, 330 ft. from S and E lines of S 40 acres of Share 13, Porcion 41.
Drlg. 300 ft.
W. F. Lacy's No. 1 V. R. deFlores, 75 ft. from N line, 107 ft. from E and W lines. Blk. 266, Porcion 38.
W.O.C. 3,787 ft.
H. J. Porter's No. 2 C. E. Smith, N end of S½ of tract in Tract 278, Porcion 40.
Spudded; S.D.

MERCEDES—HIDALGO COUNTY

Union Sulphur Co.'s No. 1 American Rio Grande L. & I. Co., 400 ft. S and W of NE cor. of Lot 229, Blk. 59 (W.O.).
T.D. 6,431 ft.; drlg. with overshot trying to pick up bit and drill collar in hole at 6,396 ft.
Union Sulphur Co.'s No. 2 American Rio Grande L. & I. Co., 400 ft. S and E lines of tract, Blk. 36, Capisallo district (W.O.).
T.D. 3,044 ft.; drlg. 4,115 ft. in sidetracked hole.

SANDIA—JIM WELLS COUNTY

Magnolia Pet. Co.'s No. 6 Seeligson, 660 ft. W. 330 ft. S of No. 3, Canales Sur. No. 20.
S.D. 6,010 ft.; (corrected depth).
O. W. Killam's No. 7 Wade, 1,320 ft. SE of No. 4, 200 ft. from NW line, 225 ft. from NE line, Lot 1, Blk. C, Lopez de Jean grant.
Rigging up.

WEINER—KENDALL COUNTY

Southwestern Dev. Co. Synd., Ltd.'s No. 1 W. G. Werner, 1,645 ft. from N line, 765 ft. from NW line of 320-ac. tract, J. F. Torrey Sur. No. 781.
Spudded.

KINGSVILLE—KLEBERG COUNTY

Ray Clark's No. 1 House, Lot 5, Blk. 37, K.T.&I. Co. Sur.
S.D. 1,000 ft.
Fidelity Exploration's No. 1 Paul O. Henry, 150 ft. from N line midway E and W lines of Blk. 2, Sec. 49, K.T.&I. Sur.
Set surface csg. 3004 ft.; no report.
Fidelity Exploration Synd.'s No. 1 Vivian Kivlin, Sec. 4, Blk. 39, K.T.&I. Sur. on Vivian Kivlin lease.
Derrick up.

JACOB POOL—McMULLEN COUNTY

Inland Oil Co.'s No. 3 Lark, 150 ft. from W line, 1,285 ft. from N line, Blk. 133, Scrugham Sur.
Rigging up.
Loma Oil Co.'s No. 2-W L. Jacob Corp., 220 ft. from E line, 1,320 ft. due N of No. 1-W, W. D. Benham Sur.
T.D. 925 ft.; working to complete.
M. E. Young's No. 8-A Cox, E of Frio River across line from Lark tract in M. Holy Sur. (old well).
Sand 1,070 ft.; no report.

TAYLOR—MEDINA COUNTY

Callahan & Robert's No. 1 Ray Taylor, 1,450 ft. NS line, 220 ft. EW line, Sur. No. 135.
Spudded.

ANGELITA—SAN PATRICIO COUNTY

Continental and Atkins & O'Neal's No. 3 Welder, 466 ft. from S line, 150 ft. W of SE cor. of Anthony tract, J. Hart Sur.
Drlg. 4,300 ft.

SINTON—SAN PATRICIO COUNTY

Conroe Drlg. Co.'s (Heep) No. 1-D Welder, N of Sinton.
Drlg. 4,300 ft.
Heep Oil Corp.'s No. 3-E Welder, 466 ft. from E line, 1,399 ft. from N line, 933 ft. due S of No. 1-E, N 400-ac. of Sec. 46, R. Montgomery Sur.
Derrick.
Plymouth Oil Co.'s No. 4-C Welder, E offset to Heep's No. 1-E.
Drlg. 2,175 ft.
Plymouth Oil Co.'s No. 2-C E. H. Welder, 2,000 ft. from N line, 650 ft. from E line, Sec. 49, Subd. No. 1 of Eliza H. Welder ranch.
T.D. 5,636 ft.; run tubing and washing well in.
Plymouth Oil Co.'s No. 3-C E. H. Welder, 744 ft. from N line, 2,000 ft. from E line, Sec. 49, Subd. No. 1, E. H. Welder ranch.
Drlg. 5,840 ft.
Plymouth Oil Co.'s No. 1-D E. H. Welder, 466 ft. from N line, 466 ft. SE of Ry., Sec. 1, Subd. No. 1, E. H. Welder ranch.
Drlg. sand 5,804 ft.

LOS OLMOS—STARR COUNTY

H. L. Curry's No. 2 Bass, 660 ft. from S line, 1,835 ft. from E line of 640-ac. tract, Sec. 8, Porcions 75, 76 and 77.
S.D. 1,250 ft.
Ed Linberg's No. 7 Bass, 1,500 ft. from W line, 1,675 ft. from N line of Share 6, Porcion 75.
S.D. 500 ft.

PLACETAS—STARR COUNTY

Hughston Oil Co.'s No. 1-A Gregg-Wood, S end of Por. 84; replacement well, 990 ft. S of State Highway No. 4.
2,850 ft.; no report.

RIO GRANDE—STARR COUNTY

Hiram Reed's No. 2 D. & C., 480 ft. from S line, 175 ft. from E line, Blk. 6, Tract 21, Porcion 80.
Sand 1,376-84 ft.; W.O.C.

SAXET—NUECES COUNTY

Benedum & Trees' No. 1 Stillwell, 330 ft. from W line, 629 ft. from N line, Blk. 31, Fishing 996 ft.; (corrected).
Houston Oil Co.'s No. 4 Morgan, 660 ft. E of No. 3, Sec. 7, Range 5.
Location.
Houston Oil Co.'s No. 4 Walton, 330 ft. EW line, 1,560 ft. NS line.
Rigging up.
Magnolia Pet. Co.'s No. 2 W. W. Walton, 330 ft. from E line, 289 ft. from S line of 92.11-ac. tract, Enrique Villareal Sur.
Location.
Southern Minerals' No. 1-A Rand Morgan, Roberts Sur.
Drlg. 5,650 ft.

BRUNI-WEBB COUNTY

Associated Oil Co.'s No. 5 Bruni, 2,310 ft. SW line, 330 ft. NW line of 500-ac. tract, Sur. 6-7, Arispe grant.
Drlg. 920 ft.
Associated Oil Co.'s No. 3 A. M. Bruni, 660 ft. N of No. 2, 330 ft. from W line, 5,000-ac. tract, Blk. 7, M. Arispe grant.
Location.
American Liberty Oil Co.'s No. 2-C A. M. Bruni Est., 266.81 ft. from E line, 408.15 from S line of Unit 2, Sec. 7, M. Arispe grant.
Sand 3,437 ft.; P.B. 3,398-3,401 ft. for 275 bbls. per day.
Highland Oil Co.'s No. 8 Bruni, 1,650 ft. from NW line, 330 ft. from NE line, Sur. 7.
Coring 3,407 ft.; had sand 3,387-94 ft.
Highland Oil Co.'s No. 10 A. M. Bruni, 949 ft. NE of No. 3, 506 ft. SE of No. 5, 202.4-ac. tract, M. Arispe grant.
Testing sand 3,403 ft.
Highland Oil Co.'s No. 12 A. M. Bruni Estate, 520 ft. E of No. 6, 330 ft. from S line of 200-ac. tract, M. Arispe grant.
Location.
O. W. Killam's No. 37 Bruni, 330 ft. from NE and SE lines, Sur. 6.
T.D. 3,399 ft.; I.P. 17 bbls. per hr.; ¼-in. choke.

LAUREL—WEBB COUNTY

South Texas Oil Co.'s No. 1 Laurel Bros., 100 ft. from E line, 200 ft. from S line of Sec. 269, Blk. 2, C.C.S.D.&R.G.N.G. Sur.
Rebuilding derrick.

WEST COLE POOL—WEBB COUNTY

Allison et al's No. 1 Moses Jones, 330 ft. S and E lines of NE 100 acres, Sur. 1,640.
Going on pump, 710 ft.
Ross Amigos' No. 1 Garcia, 450 ft. from E line, 1,250 ft. from N line of Sur. No. 2,165.
Testing 1,900 ft.
Ross Barnhart's No. 1 de la Garza, 1,500 ft. from N line, 200 ft. from E line of Sur. 262.
T.D. 2,406 ft.; tested oil, gas and mud.
Magnolia Pet. Co.'s No. 10-A Benavides, 150 ft. from N line, 300 ft. W of No. 8, 280-ac. tract, S.K.&K. Sur. No. 660.
Drlg. 1,200 ft.
Magnolia Pet. Co.'s No. 1X-S Benavides, 313 ft. from NE and SW lines, 347 ft. from NW and SE lines, M. E. Hale Subd. No. 185.
Derrick.
Magnolia Pet. Co.'s No. 3 S. S. Benavides, 200 ft. from N and W lines of Sec. 696, B.S.&F. Sur.
Location.
Frank Smith's No. 1 Moses Jones, 2,150 ft. E line, 2,850 ft. S line, Sur. 1,640.
Drlg. 1,000 ft.

NOACK—WILLIAMSON COUNTY

Coffield & Lanning's No. 3 Heap, 200 ft. from N line, 225 ft. from W line of tract in White Sur.
Location.
R. R. Ogden's No. 1 Matteck, 150 ft. N and W lines of 103.5-ac. tract in White Sur.
Location.
W. L. Stephens' No. 1 J. P. Carlson, 200 ft. out of NW cor., 900 ft. SE line, 610 ft. SW line of Samuel C. Jones Sur.
400 ft.; no report.

BYERSVILLE—WILLIAMSON COUNTY

H. T. McGee's No. 1 A. J. Hesi, 3,100 ft. from SW line, 3,250 ft. NW line, P. Cartwright Sur.
995 ft.; no report.
Elmer Rule et al's No. 1 Bachmeyer, Cartwright Sur., 450 ft. from NW line, 150 ft. from NE line, 70.1-ac. tract.
Moving in material.
Taylor Ref. Co.'s No. 9-A Sladek, H. White Sur., 150 ft. from NE line, 1,200 ft. SE line (creek).
Shale 700 ft.; no report.

BLAS URIBE—ZAPATA COUNTY

O. W. Killam's No. 3 Bruni, 5,327 ft. from NW line, 3,386 ft. from NE line of Borrocitio pasture, J. V. Borrego grant.
Sand 848-57 ft.; S.O.; standing.
O. W. Killam's No. 10 Bruni, 450 ft. from SW line, 150 ft. from NW line of Blk. 69, Borrego grant.
Sand 1,819-22 ft.; T.D. 1,833 ft.; S.D.
Martinez, Eravi & Daniels' No. 1 A. M. Bruni, 150 ft. from SE line, 750 ft. from NW line of 40-ac. tract, Blk. 44, Blas Uribe Sur. No. B-8.
Rig.

ESCOBAS—ZAPATA COUNTY

Kleiner & Hill's No. 12 Jose Gutierrez, 392.9 ft. from NW line, 172 ft. from NE line, Share 4, Fansler Parti. of Las Comitas grant.
Sand 1,221-28 ft.; W.O.C.

LOPENA—ZAPATA COUNTY

Gem Oil Co.'s No. 1 Ramirez, 330 ft. from NW and SW lines of Share 12, Por. 17, J. C. Ramirez grant.
Sand 2,134-2,227 ft.; showing lots of gas.
Lawson & Leavel's No. 1 Winslow, 330 ft. NW and SW lines of Share 7, Por. 19.
Abandoned.
Trowel et al's No. 1 W. Z. Guerra.
Coring brittle shale 1,790 ft.; no report.

MIRANDO VALLEY—ZAPATA COUNTY

C. L. Smith's No. 1 Robert Hinnant, 330 ft. out of NW cor. Sec. 307, Blk. 27, F. M. Makelg Sur.
Coring 1,640 ft.

Rank Wildcat in Bossier Parish Produces Gas; North Louisiana Wildcatting Now Increasing

By J. R. CRUMPTON
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., June 17.—The tangible results of drilling activities in this division during the past week showed one good gas well and one oil well in proven territory and also confirmed predictions that a rank wildcat in the northern part of Bossier Parish would be a gas producer. Wildcatting continues to be on the upward trend in the North Louisiana district with several new blocks in the making and a number of tests in widely scattered areas nearing the pay horizon.

NORTH LOUISIANA

The top of Trinity production was extended to the east in the Sligo Field in Bossier Parish with the completion of United Gas Public Service Co.'s No. 1-A R. V. Kerr, in Section 24-17-12. The well gauged 35,795,000 feet of gas with 1,890 pounds rock pressure from a total depth of 4,295 feet. In the Converse Field of Sabine Parish, H. H. Morris, trustee's No. 1 Henderson, Section 29-9-13, was completed flowing an estimated 400 bbls. per day from the chalk rock at 1,698 feet. The other completion was a failure several miles from production in the old Caddo producing area. Simplex Oil Co.'s No. 1 Keeth, Section 18-20-14, was dry and abandoned at 2,748 feet after plugging back and testing at 2,340 feet.

An interesting wildcat is in the making with the assembling of a block about 4 miles southwest of the town of Minden in Webster Parish; C. H. Witt and W. W. Bennett of Kilgore, Tex., have assembled approximately 4,000 acres centering around Section 1-18-10, and have a contract to drill a 3,000-foot hole. Although Blossom production is expected around the 2,000-foot level, the contract depth should contact the Woodbine sand if the former fails to produce. Associated with the two operators are L. J. Byrd and M. S. Eldred of East Texas, both connected with the Ozozo Refining Co. and the Ortez Oil Co. in the East Texas Field. This block, a hot spot northwest of the "Dubberly High," was assembled last year by Jimmy Gault and others of Shreveport and a derrick erected on location. The area has a good geological report, having been mapped out by several independent geologists of this area. Only one wildcat location was staked in the North Louisiana district during the week. Northwest of the Bellevue shallow field in Bossier Parish, Bossier Oil & Gas Co. is rigging up No. 3 Sherrill in Section 13-19-12, on a block on which two previous wells have been drilled, both of which showed gas from various depths, but also had a good flow of salt water.

Outstanding Wildcat

The outstanding wildcat of the week in this district was Plain Dealing Syndicate's No. 1 L. A. King, in Section 36-23-13, about 4 miles northwest of Plain Dealing in the northwestern part of Bossier Parish. After a drill stem test developed a good show of gas two weeks ago, 4¾-inch casing was set at 2,824 feet with the hole bottomed at 2,840 feet. Since drilling plug, the well tested an estimated 5,000,000 feet of gas from the Blossom sand and opens a new gas-producing territory in this prolific parish. Other wildcats in this parish follow: W. A. Kirkland, trustee's No. 1 Jarrett & McKeller, Section 3-21-13, drilling in chalk rock at 2,170 feet; R. L. Skidmore's No. 1 Davis, Section 12-18-13, about 8 miles east of Shreveport, drilling in shale at 1,700 feet; Leonard Co.'s No. 1 Pearson, Section 22-21-14, fishing for drill stem at 3,300 feet; Triangle Drilling Co.'s No. 1-A State of Louisiana, on the flank of the Sligo Field, drilling at 3,991 feet and should contact Oolitic lime of the upper Trinity around the 4,300-foot level.

Keatchie Area

Interest in the Keatchie area in the northwestern part of De Soto Parish and the southwestern part of Caddo Parish has cooled off to some extent with the failure of E. B. Bird and others' No. 1 A. D. Johns, Section 20-14-16, to make a well when tested. The wildcat, which is reported to have tested seven joints of 38 gravity oil at 2,630 feet, swabbed dry after casing was set and is shut down waiting orders. A few miles northeast in Caddo Parish, A. D. King's No. 1 Sallie Roach, Section 4-14-16, is bailing to test with a show of oil and salt water from 2,712 feet. In the Rodessa deep gas area of northwestern Caddo Parish, United Gas Public Service Co. is drilling three wells, one nearing the pay horizon. Its No. 1 I. L. Young, 21-23-16, has set 7-inch casing at 5,594 feet with the total depth at 5,608 feet. In Caldwell Parish, Crtichett & Woods' No. 1 Kraft, Section 18-11-3e, is coring at 1,655 feet. In the same parish, G. D. Davis' No. 1 Louisiana Central Lumber Co., Section 14-11-3e, an old well abandoned in the fall of 1934 at 1,850 feet, is resuming operations and washing to bottom. The third wildcat in this parish, G. W. Zeigan and others' No. 1 Louisiana Central Lumber Co., Section 25-13-3e, is temporarily shut down at 569 feet. Other North Louisiana wildcats follow: De Soto Parish, Ed Safford's No. 1 Thigpen, Section 33-13-13, swabbing a show of oil from chalk at 1,730 feet; East Carroll Parish, O. G. Collins and others' No. 1 H. L. Hunt, Section 26-22-13, topped the Nacatoch at 3,046 feet and a drill stem test from 3,046-65 feet was dry. Another drill stem test from 3,046 to 3,212 feet developed 16 fourbles of salt water and 4 fourbles of mud with a show of gas in seven minutes. The test is now shut down waiting orders at 3,303 feet. In the same parish, Century Oil & Drilling Co.'s No. 1 Olive Dell, Section 56-21-12e, is lubricating stuck drill stem with oil at 2,541 feet. Near the town of Eros, in the northeastern part of Jackson Parish, American Liberty Oil Co. is arranging to drill two wildcats, one in Jackson Parish and the other a few miles northeast in Ouachita Parish. The former is No. 1 Lusk in Section 1-16-1w and the latter is No. 1 Golson in Section 25-17-1e. A block of approximately 15,000 acres has been assembled with a good geological report and a seismograph survey. The tests are being looked upon as potential new producing territory and the area is getting a good play in leasing and royalty.

ARKANSAS

This district reported one completion and no new locations. Another failure in the recent hot spot west of Camden in Ouachita County just about spells finis for that area. Charles Steele and others' No. 1 H. W. Myar estate, Section 16-13-18, was abandoned in sandy shale at 1,522 feet. This is probably the last of several failures in the immediate vicinity of a pumping well brought in around this depth several months ago.

The outstanding disappointment in this district, however, was Gulf Refining Co.'s No. 49 Louis Werner, Section 5-16-16, a deep test on the western flank of the Smackover Field in Union County. After setting 7-inch casing at 6,224 feet to test a show of oil from hard black lime at 6,420 feet, the well swabbed salt water with 2½-inch tubing at a total depth of 6,431 feet. It is not known definitely at this writing whether the test will be deepened, but it very likely will be. There is a known deep seated salt dome in that vicinity, contacted and drilled into about 1,400 feet by Lion Oil Refining Co. about two years ago on a test and it is reported the present test may drill through this salt formation if it is contacted.

None of the other wildcats in this district developed anything of interest. Kamon & Neely's No. 1 Cockran, Section 26-19-25, Lafayette County, is coring at 3,838 feet. A Miller County outpost well is shut down, and in Sevier County, Pendleton & Vaughn's No. 1 J. E. Johnson, Section 35-9-30, a third test in this area, has set 10-inch surface casing at 40 feet and drilling at 120 feet.

Daily Production

Estimated daily gross production all companies week ending June 14:

NORTH LOUISIANA

Bellevue	590
Caddo, light	5,030
Caddo, heavy	2,045
Converse	1,310
Cotton Valley	440
DeSoto and Red River	1,305
Elm Grove	373
Haynesville	2,400
Holly	153
Homer	2,680
Pleasant Hill	165
Sarepta-Carterville	540
Urania	3,050
Zwolle	1,800
Total	22,965

SOUTH ARKANSAS

Champagnolle	2,275
El Dorado	2,210
Lisbon	300
Miller County	1,660
Nevada	885
Smackover, light	2,300
Smackover, heavy	18,515
Stephens	625
Urbana	2,000
Total	30,770

Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

AVOYELLES PARISH

Bell Oil Co.'s No. 2 Thompson-Koltz, 450 ft. S, 350 ft. E, NW cor. Sec. 11-2n-5e.
Partly R.U. and S.D.

Southern Star Pet. Co.'s No. 1 O. G. Boyette, Sec. 28-3-5e.
S.D. for high wtr. 3,875 ft.

BOSSIER PARISH

Bossier O. & G. Co.'s No. 3 Sherrill, 330 ft. N and W, SE cor. Sec. 13-19-12.
Rigging up.

W. A. Kirkland's No. 1 Jarrett & McKeller, 330 ft. N and W, S cor. NW NW Sec. 3-21-13.
Drlg. 2,170 ft.

Leonard Co.'s No. 1 Pearson, 250 ft. S and E of C Sec. 22-21-14.
Fishing for D.S. 3,300 ft.

Plain Dealing Synd.'s No. 1 L. A. King, 300 ft. S and E, NW cor. NE NE Sec. 36-23-13.
Drlg. plug 2,824 ft.; T.D. 2,840 ft.

Richplane Oil Co.'s No. 1-A S. H. Bollinger, Sec. 22-22-13.
Set 10-in. 40 ft.

R. L. Skidmore et al's No. 1 Davis, Sec. 12-18-13.
Drlg. 1,700 ft.

Triangle Drlg. Co.'s No. 1-A State of La., Sec. 23-17-12, 1,000 ft. E, 2,640 ft. S, NW cor.
Drlg. 3,991 ft.

United Gas Pub. Serv. Co.'s No. 1-A R. V. Kerr Unit, NE cor. Sec. 24-17-12.
Comp.; 35,800,000 ft. gas, 4,295 ft.

CADDO PARISH

Nick Babare's No. 1 Gibbs, Sec. 16-20-15.
W.O.S.R. 2,265 ft.

Babare and Ark.-La. Gas Co.'s No. 1 fee, NE cor. SE SE Sec. 16-20-15.
Set 10-in. 40 ft.; drlg. 450 ft.

J. Ed Bailey, tr.'s No. 1 Hartzo, NW cor. NE NW Sec. 28-22-16.
S.D. 1,236 ft.

Barnsdall Oil Co.'s No. 2 School fee, SE cor. NW SE Sec. 16-20-15.
Set 10-in. 40 ft.; drlg. 614 ft.

Cal-La. Devel. Co.'s No. 1 Glassell, NW NE Sec. 11-19-15.
Set. 10-in. 40 ft.

Holly Oil Co.'s No. 1 Thigpen & Herold, Sec. 15-20-15.
Drlg. 2,170 ft.

Hillman et al's No. 1 J. S. Noel Est., NE NE Sec. 12-20-16.
Set 4-in. 1,318 ft.; T.D. 1,514 ft.; (corrected).

F. D. Hyde's No. 1 Thigpen & Herold, 350 ft. S and E, C Sec. 5-15-15.
Rigging up.

A. D. King, tr.'s No. 1 Roach, 641 ft. E, 375 ft. N, SW cor. SE Sec. 4-14-16.
Bailing to test 2,712 ft.

Leonard Co.'s No. 1 M. A. Dickson, 1,650 ft. S, 1,260 ft. E, NW cor. Sec. 36-21-15.
Drlg. 2,224 ft.

Leonard Co.'s No. 2 Green, SW SW Sec. 8-20-15.
Set 10-in. 20 ft.; drlg. 350 ft.

Murray Oil Co.'s No. 2 Noel, 495 ft. S, 735 ft. E, NW cor. SW Sec. 15-20-15.
Rigging up.

Press & Lambert's No. 2 Hughes, 350 ft. N and W of C Sec. 15-20-15.
Rigging up.

Recovery Oil Co.'s No. 1 W. L. Sibley, Sec. 15-19-14.
Arranging to set csg. 2,448 ft.

J. T. Reese's No. 1 Waskom, 330 ft. S and W, NE cor. Sec. 30-19-16.
Set 10-in. 60 ft.

Texas Co.'s No. 4 School fee, Sec. 16-20-15.
Set 6-in. 2,159 ft.

A. C. Scott et al's No. 1 Noel Est., 330 ft. S and E, NW cor. Sec. 22-20-15.
W.O.S.R. 2,261 ft.

Shreveport Oil Corp.'s No. 5-B Muslow, 150 ft. S, 1,320 ft. E, NW cor. Sec. 9-20-15.
Drlg. 2,172 ft.

Simplex Oil Co.'s No. 1 Keeth, 660 ft. N and E, SW cor. SE Sec. 18-20-14.
Dry and abd. 2,748 ft.

Texas Co.'s No. 2 Thigpen, 300 ft. S and E, C Sec. 15-20-1s.
Set 6-in. 2,182 ft.

C. A. Tooke's No. 1 Gibbs, NE SE Sec. 16-20-15.
W.O.S.R. 2,224 ft.

CALDWELL PARISH

Critchell & Woods' No. 1 Kraft, 330 ft. N and W, SE cor. NW NE Sec. 18-11-3e.
Coring 1,655 ft.

G. D. Davis' No. 1 La.-Cen. Lbr. Co., Sec. 14-11-3e.
Washing to bottom 1,850 ft.

G. W. Zeigan et al's No. 1 La.-Central Lbr. Co., 175 ft. S and E, NW cor. SW SW Sec. 25-13-3e.
S.D. 569 ft.

CATAHOULA PARISH

Geo. J. Phillips' No. 1 La.-Central Lbr. Co., 127 ft. N, 2,490 ft. W, SE cor. Sec. 2-9-6e.
Tested; estimated 500,000 ft. gas, 943 ft.

CLAIBORNE PARISH

E. T. Oakes' No. 1 H. W. Patton Est., 660 ft. S and W, NE cor. Sec. 1-20-5w.
Set 12½-in. 654 ft.

DESOTO PARISH

E. B. Bird et al's No. 1 J. H. Johns, 330 ft. N and W, center Sec. 20-14-6.
S.D.; W.O. 2,630 ft.

DeSoto Pet. Co.'s No. 1 B. Y. Wemple, C S½ SE NE SW Sec. 14-12-11.
Arranging to set csg. 2,590 ft.

E. L. Foster's No. 1 Youngblood, Sec. 9-11-14.
Set 7-in. 2,735 ft.; T.D. 2,860 ft.

P. G. Fraley et al's No. 1 G. R. Stell, 330 ft. S and W, NE cor. Sec. 5-12-16.
R.U. and S.D.

Leslie Prod. Co.'s No. 1 Ramsey, 150 ft. N and W of C Sec. 36-11-11.
Set 10-in. 45 ft.

National Oils, Inc.'s No. 1 B. Y. Wemple, NW SW Sec. 14-12-11.
S.D. 120 ft.

C. T. Ruffins' No 1 Lee, 400 ft. S, 334 ft. E, NW cor. SW Sec. 33-14-13.
Drlg. 2,750 ft.

Ben F. Smith et al's No. 1 Porter, 330 ft. N and E, SW cor. NW Sec. 25-12-13.
Drlg. 3,015 ft.

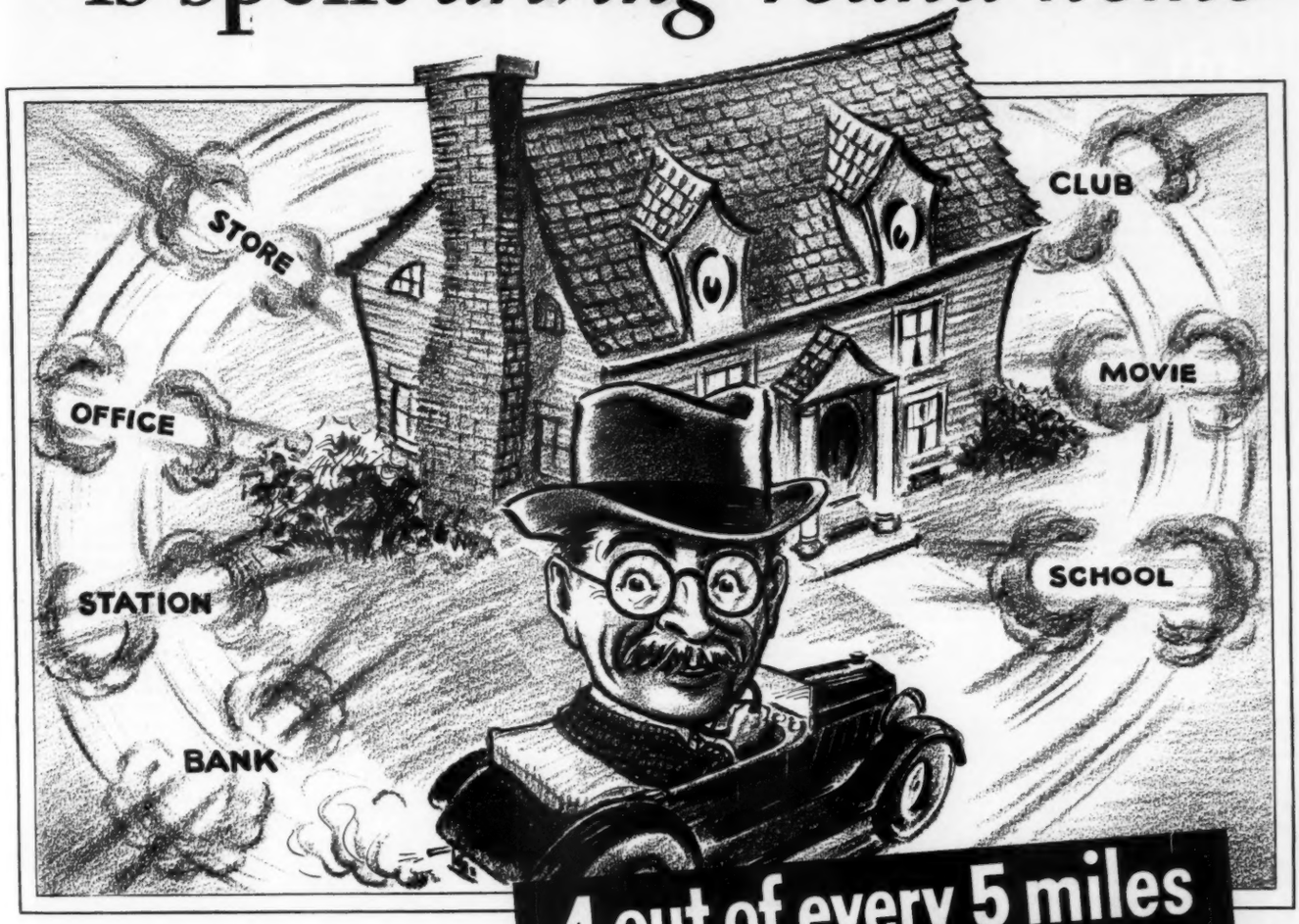
Ed Saffold et al's No. 1 Thigpen, 400 ft. S, and 308 ft. W, NE cor. SW NE Sec. 33-13-15.
Swbng. to test 1,730 ft.; (corrected).

EAST CARROLL PARISH

Century Oil & Drlg. Co.'s No. 1 Olive Dell,

(Continued on Page 88)

80¢ of your gasoline dollar is spent *driving 'round home*



4 out of every 5 miles you drive *are stop-and-go*

Today's short trips waste your money—unless your gasoline has these Three Kinds of Power

STOP-AND-GO driving can give you 2, 3 and EVEN FOUR MILES LESS per gallon of gasoline than you get on long trips.

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Super-Shell is the FIRST truly balanced gasoline. And so it cuts driving costs 3 ways:—

STARTING—With its even volatility, Super-Shell can save up to a cupful of gasoline on every "cold" start. (You have relatively "cold" starts in summer.)

SHIFTING—Super-Shell can save up to a cupful of gasoline in 10 minutes of hard pulling, or rapid accelerating, or on hills.

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Alloy Steels Used in Oil Refinery Distillation and Cracking Equipment

J. C. MORRELL, L. A. MEKLER and GUSTAV EGLOFF
Universal Oil Products Co.

The use of higher operating temperatures and pressures and of higher capacity units in the treatment of petroleum makes constantly increasing demands upon the materials used in the various equipment and parts employed in refineries.

Alloy steels are generally used in the construction of cracking units because of the high tempeatures and pressures employed in their operation.

Safety from accident is one of the chief factors in the proper operation of cracking equipment. Safety is promoted by use of alloy metals wherever necessary in the cracking plant.

Some of the specific parts of the cracking unit in which alloys are frequently used are: Furnace tubes and tube supports; furnace header plugs; return bends; furnace emergency dampers; reaction chamber liners; dephlegmator liners; hot oil pumps; pressure distillate pumps; trim for cast and forged steel valves; stud bolts and gaskets for high temperature-pressure service.

Steel Properties

To be of general use in the modern process, a satisfactory metal for petroleum refining equipment must possess three major properties: (1) Resistance to corrosion of surfaces in contact with the oil undergoing treatment; (2) stability and strength at high temperatures; (3) resistance to oxidation and to oxides of sulphur of surface directly heated or exposed to combustion gases.

The above properties are shown in the order of historical sequence in which the need for them became apparent in the petroleum industry.

Corrosion was one of the first problems that confronted the petroleum refiner when he left Pennsylvania, the birthplace of refining, with its low-sulphur noncorrosive crudes. Wrought iron or boiler-plate steel gave satisfactory service for years in the shell stills used in Pennsylvania, but were corroded out in a short time—sometimes only a matter of weeks or months—when used in processing California and some of the West Texas and Coastal oils.

Fig. 1—Photomicrograph of annealed structure of an alloyed steel. Magnification ×1,000

The introduction of high capacity pipe still units operated at high temperatures and with high rate of heat transfer and extensive erosion because of the velocities with which the oil flows through the tubes while being heated, accelerated the corrosive action of the oil. In pipe stills particularly, a material had to be found to withstand corrosion better than the wrought iron and mild steel which was then in use.

Special alloys had to be developed to meet the specialized requirements which the service needs. Stainless steels, primarily used for cutlery, were the first tried to combat corrosion in the petroleum industry. They contained approximately 18 per cent chromium with 0.10 per cent maximum carbon. At first these chrome irons were available only in cast form for special uses, but later low-carbon high-chrome stainless steel pierced tubes were made and used with good results.

The stainless steels showed remarkable resistance to corrosion, and while quite expensive showed promise of solving this problem for the California and some of

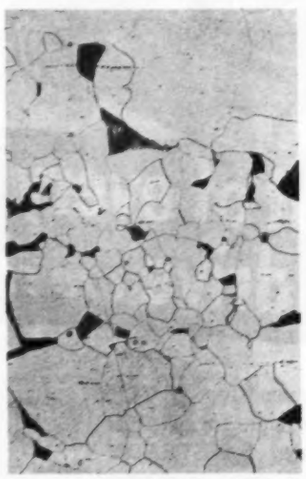


Fig. 2—Same steel as shown in Fig. 1 after partial transformation of the pearlite. Magnification ×100

the Coastal refineries that processed very corrosive oils. However, the stainless steels lacked mechanical stability and therefore did not prove successful. With chromium contents higher than 14 per cent, stainless steels do not transfer from alpha to beta or to gamma modifications. The 18 per cent chromium material used originally cannot be brought to proper crystal size by heat treatment. The first hot-finished tubes produced had a coarse grain and were therefore very brittle. While the cold-drawn tubes produced with considerable difficulty in the earlier days had a smaller grain size and were considerably tougher, any thermal treatment resulted in grain growth and brittleness when cold so that irrespective of what physical properties the stainless steel exhibited after the proper mechanical working when cold, the brittleness reappeared as soon as the steel was heated to temperatures of 700-800° F. The brittleness when cold, or "cold shortness" of 18 per cent chromium steels was forcefully demonstrated at the Detroit Edison steel plant where a monkey wrench dropped on the top of a superheater bank broke through the tubes of the whole bank until it hit the floor. Some refiners also had similar experiences regarding the brittleness of the chrome steels when rolling in tubes while cold and during cleaning. The straight chrome steels were therefore abandoned as unsafe.

Simultaneously with the development of the stainless steels there was devel-

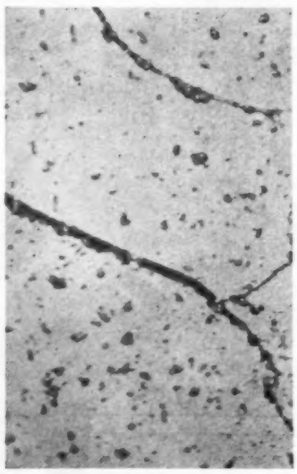


Fig. 3—Spheroidization of the carbide particles with most of them still retained in the grain of the structure. Magnification ×1,000

oped a chrome-nickel steel containing approximately 18 per cent chromium and 8 per cent nickel. The 18-8 steels did not show temper embrittlement and gave indications of being much more satisfactory for service when repeatedly heated and cooled than the straight chrome steels. However, as the working metal temperature increased, even the 18-8 alloys showed a tendency to embrittlement. Although these steels could be thermally treated to form a super-saturated solution of the carbides in the grains that remained stable at 700-800° F. (the range of carbide precipitation for straight chrome steels) it was found that the carbides began to reprecipitate at 1,000° F. Further work had to be done on the control of the minor elements present such as carbon, molybdenum, titanium, as well as of the thermal treatment, and the mechanical working of the 18-8 steels before they were produced to cause them to remain stable when repeatedly heated up to 1,250° F. and cooled.

Strength and Stability

Strength and stability of alloys at high temperatures are important requirements in cracking oil. While corrosion resistance was of importance, the mechanical strength became of paramount importance for material used in cracking units. The early cracking units were operated intermittently at relatively mild cracking temperatures so that the metals were subjected to repeated heating and cooling, causing a condition of dead-soft anneal irrespective of the preliminary thermal treatment of the metal. For this reason the early straight chromium stainless steel and the 18-8 steel could not be used satisfactorily. Corrosion was combated by sheer thickness of plain carbon steel which while nonresistant to corrosion was sufficiently strong and stable at the operating temperature of the early units. As the operating temperatures increased and higher rates of heat input were employed in the heater, the strength of the metallic elements such as the heating tubes could not be increased by thickness of metal alone on account of the hoop stress in the tubes resulting from the difference of temperature between the outside and the inside section of the tube. Under these conditions a point is soon reached where further increase in the thickness decreases the strength of the tube because of hoop stress. Therefore, materials of high strength at high temperatures had to be developed to keep thickness and hoop stress to a minimum.

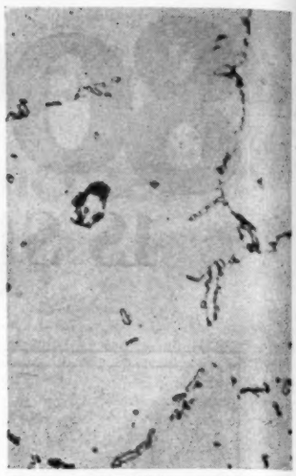
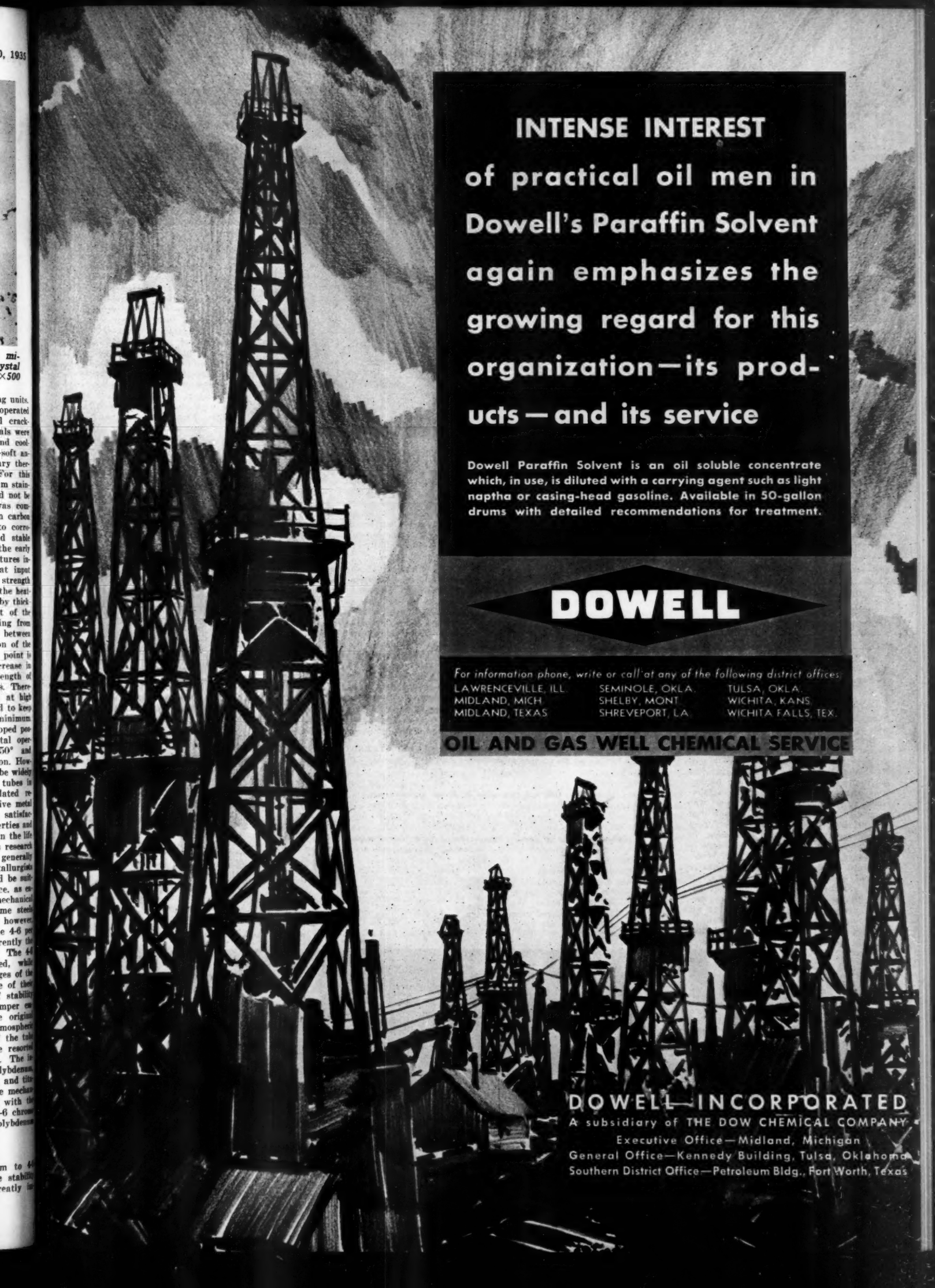


Fig. 4—Carbide particles migrating toward the crystal boundaries. Magnification ×500

The 18-8 steels as later developed possessed high creep stress at metal operating temperatures below 1,250° and were highly resistant to corrosion. However, they were too expensive to be widely used and some large users of tubes in the petroleum industry stimulated research to develop a less expensive metal than 18-8 which would possess satisfactory corrosion resisting properties and give an economic balance between the life of the metal and its price. This research was somewhat retarded by the generally prevailing opinion among metallurgists that only austenitic steels would be suitable for both corrosion resistance, as encountered in refining, and mechanical strength. The use of low-chrome steels of the pearlitic type were tried, however, and found to be successful. The 4-6 per cent chromium content is apparently the most economical of the series. The 4-6 chromes as originally produced, while possessing some of the advantages of the austenitic steels, inherited some of their disadvantages—namely, lack of stability of the grain structure and temper embrittlement. A number of the original tubes cracked when rolled at atmospheric temperature so that heating of the tube ends to 250-300° F. had to be resorted to to obtain a satisfactory job. The introduction of tungsten, then molybdenum, and eventually by molybdenum and titanium to the steels improved the mechanical stability of the material, with the result that a stable pearlitic 4-6 chrome steel with molybdenum or molybdenum and titanium can be obtained.

Molybdenum Steels

The addition of molybdenum to 4-6 chrome not only improved the stability of the grain structure but greatly in-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proved the high-temperature strength of the material. This property of molybdenum was investigated on other steels with the result that it was found that the addition of molybdenum to plain low-carbon steel improved its tensile strength at high temperature. The carbon-molybdenum tube showed greater high-temperature strength than 4-6 chrome tubes without molybdenum at the lower temperatures, about the same strength at temperatures of 950-1,000° F. and only slightly lower strength at temperatures from 1,000° F. up to 1,150°, at which temperature both 4-6 chrome-molybdenum and carbon-molybdenum tubes become too weak for satisfactory service.

The successful application of low-chrome (4-6 per cent) pearlitic steels for mild corrosion resistance and particularly their greater stability at high temperatures, has opened up the field of pearlitic steels in general for high-temperature service where corrosion resistance is not improbable. Steels containing as little as 1.5 chromium but with addition of molybdenum, silicon, titanium and other elements were introduced for

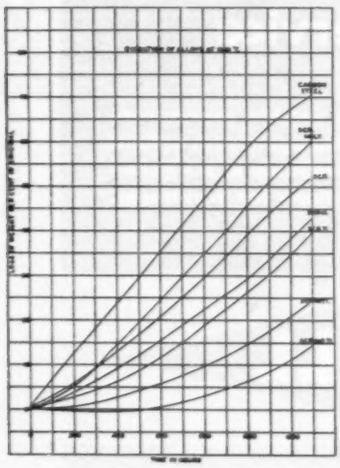


Fig. 6—Oxidation of alloys at 1,500° F.

high-temperature service and at present there are a number of such steels available for this service.

Because of the increasing operating temperatures and higher rates of heat transfer, oxidation by the excess air used in combustion became a serious problem so that resistance to oxidation became almost as important a factor as resistance to corrosion. The problem was somewhat complicated by the fact that one of the greatest aids to higher creep stress, molybdenum, is a detriment in steel as far as its oxidation resistance is concerned. The oxidation of steel is determined by the type of scale originally formed. The molybdenum-bearing steels form a flaky scale which does not adhere to the steel so that furnace surfaces are subjected to oxidation at all times, accelerating the loss of metal.

The present trend is to coat steels that

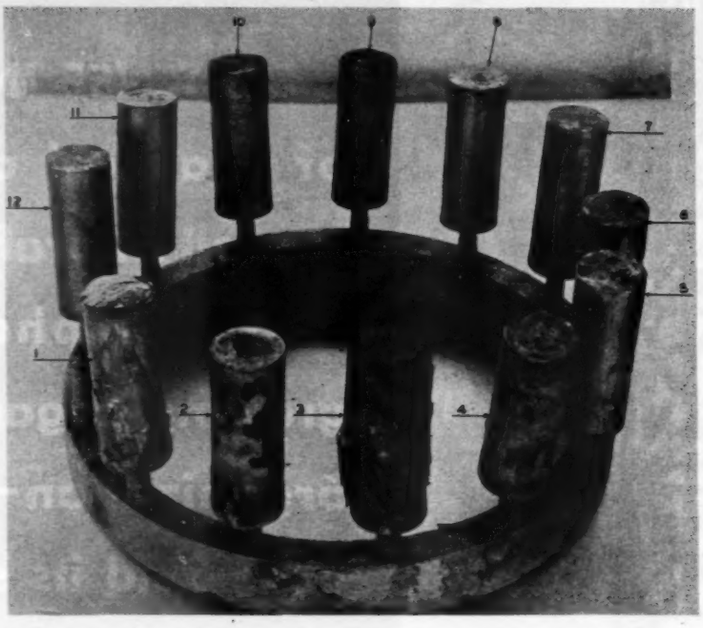


Fig. 5—Results of oxidation test during which 12 different alloyed steels were subjected to a temperature of 1,200° F. for 250 hours

are stable at high temperatures and possess high creep stress, with protective coatings both for corrosion and oxidation resistance to obtain the composite effect at the least possible expense.

High Temperatures

The properties of alloy steels at high temperatures are affected to a marked extent both by the method of manufacture and the composition in respect to the presence of so-called minor elements, that is, those metals present in small quantities.

While the open-hearth steel gives higher stress values at 800° F. (1,500 vs. 1,300), at 900° F. the killed steel is almost twice as strong, and at 1,000° 1.8 times as strong as the open hearth. The fine-grain structure steel is 40 per cent stronger than the coarse-grain structure at 800°, 10 per cent weaker at 1,000° and almost one-half of the strength at 1,200° F.

Heat treatment that permanently increases the grain of the structure reduces the creep stress value of steel, which is the reason why the normalized and tempered steel has less than one-half the strength of the hot-rolled steel which retains substantially the original structure.

The influence of minor elements upon the properties of steels is shown by Table 1 where a difference in the two alloys is only in the carbon content 0.07 vs. 0.48. The low-carbon content steel has an alternate strength of less than half at room temperature and creep stress of less than half at 800° of the high-carbon steel, but shows its superiority over the high-carbon steel at 1,000° F., and particularly at 1,200°, at which temperature the low-carbon steel shows sufficient strength for satisfactory operation.

The 4-6 chrome and 4-6 chrome-tungsten steels are subject to temperatures around 900° F. and are therefore unsatisfactory for cracking plant service. The 4-6 chrome-molybdenum steels are stable up to 1,200° F. and therefore are satisfactory.

The influence of the size of grain upon the high-temperature properties of the metals is substantiated in practice since better results are obtained from castings than forgings of the same composition. This may be explained by the inherent crystalline structure of a casting and also by the fact that in a casting the crystals produced are not deformed by mechanical working as is the case with forgings.

The main cause of instability of steel is the transformation of the grain structure, particularly the separation of alloying elements from the main body of the alloy. Carbon is the worst offender and precipitation of carbon from the matrix of the crystal spheroidization of carbides and their subsequent migration to the boundaries is the most pronounced indication of transformation. Figure 1 shows a photomicrograph of annealed structure of an alloy steel at 1,000 diameters magnification. The pearlite grains have been only partially spheroidized by normalizing. Figure 2 shows the same steel with partial transformation of the pearlite. Figure 3 shows the spheroidization of the carbide particles with most of them still retained in the grain of the structure. Figure 4 shows most carbide particles migrating towards the crystal boundaries.

Since the strength of metals and their

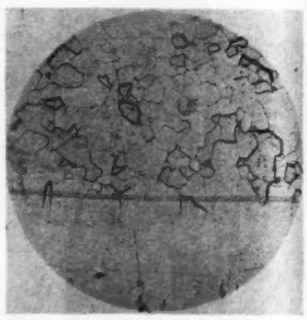


Fig. 7—Photograph of a calorized DM tube after service at high temperatures. Magnification ×50

resistance to corrosion at high temperatures is determined apparently by the structure of the intercrystalline material, the migration of the carbides to the boundaries and the consequent weakening of the boundaries contributes to failure of metal at high temperatures. Carbon precipitating out of the crystal toward the boundary does not do so by itself but usually takes with it alloying elements such as nickel and particularly chromium which greatly reduced the corrosion resistance of the steel. One part of carbon will combine with 16 parts of chromium. Hence, for a steel containing 0.15 per cent carbon and 2.5 per cent chromium no chromium as such will be left in the matrix of the alloy.

(Continued on Page 62)

TABLE 1—EFFECT OF CARBON CONTENT ON CREEP STRENGTH OF STEEL*

No.—	Carbon	Manganese	Phosphorus	Sulphur	Silicon	Chrome	Molybdenum
1	.07	.42	.014	.015	.72	1.25	.54
2	.48	.49	.015	.015	.62	1.20	.52

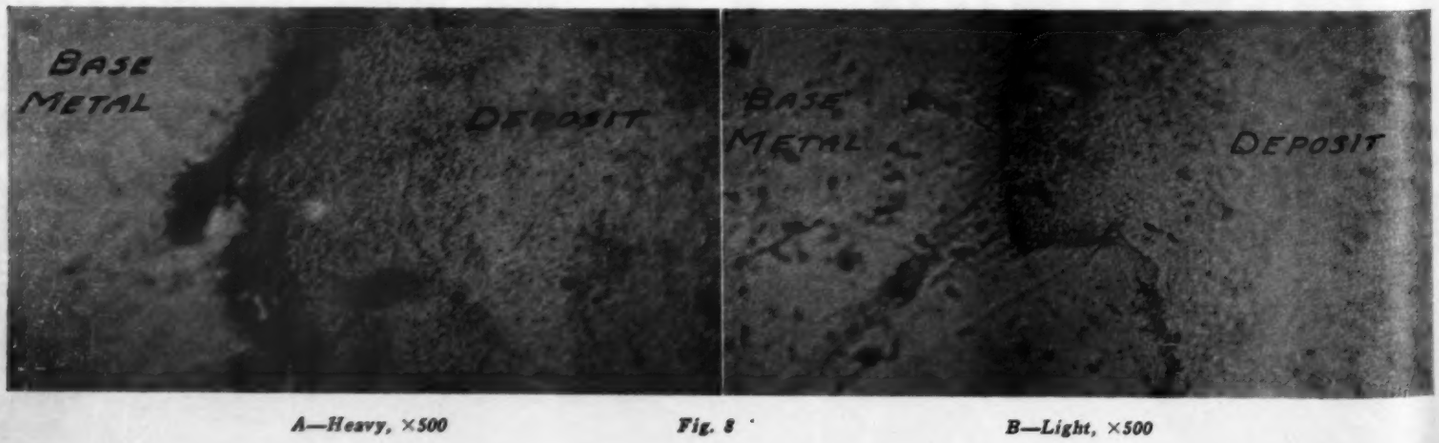
Original Properties at Room Temperature

	Yield strength	Ultimate strength	Elong. 2"	Red. of area	Brinnell	Charpy
1	35,200	66,500	36.5	72.7	123	68.0
2	108,500	146,150	17.0	41.5	285	15.5

Creep Strength at Various Temperatures for Different Rates of Creep

	Temperature	1% per 100,000 hrs.	1% per 10,000 hrs.	1% per 1,000 hrs.
1	800° F.	20,000	29,000	42,500
2	800° F.	47,000	92,000	.....
1	1,000° F.	15,000	24,000	37,500
2	1,000° F.	7,800	23,000	68,000
1	1,100° F.	4,300	6,800	10,800
1	1,200° F.	1,950	2,950	8,100
2	1,200° F.	215	900	2,800

*Private communication from Timken Steel & Tube Co.



A—Heavy, ×500 *Fig. 8* *B—Light, ×500*

Service Characteristics of Motor Oils as Related to Chemical Composition

By DAVID R. MERRILL, C. C. MOORE, Jr., and ULRIC B. BRAY
Union Oil Co. of California*

(Continued from Page 62, June 13 issue of The Oil and Gas Journal)

In addition to satisfactory wear-preventing and nonsludging characteristics, a lubricating oil for use in internal-combustion engines should preferably exhibit minimum carbon deposition. It is well known that in gasoline engines the major proportion of the carbon on the cylinder heads and pistons is derived from the lubricating oil, and that the presence of this carbon induces knocking, and often necessitates the use of fuel of higher octane rating than if the engine were clean. In fact, the increase in octane requirements of an engine on continued service appears to be one of the most tangible elements of motor performance which the average motorist can evaluate. For this reason, it seemed desirable, in undertaking an investigation of the carbon-depositing characteristics of certain motor oils, to base the comparison upon the change in octane requirements of the engine, rather than to measure carbon deposition by collecting and weighing the deposits. This method of following carbon deposition was employed by Hawley and Bartholomew[4] who observed an increase in octane requirements from 64 to 80 octane number during 200 hours' operation of a test engine, with very little increase thereafter. Simultaneously the power output decreased about 4 per cent. It is understood that the oil used in this test was a high-quality paraffin-base oil of S.A.E. 30 grade.

In the prseent work on carbonization characteristics, 12 automobiles were operated under conditions of routine service. Each car was run on two types of oil; one the highly solvent-treated oil from California waxy crude oil, and the other comprising representative brands of high-grade Pennsylvania oils containing residual stocks. Oil changes in all the cars were made at the same mileage intervals. In eight of the cars chosen for the test, the valves were ground and the combustion chambers cleaned thoroughly of all previous carbon deposits before beginning the test on each of the two types of oil. With the other cars, care was taken to insure that the engines had been run for a period of at least 8,000 miles on high-grade Pennsylvania oil since the carbon had been removed. Then, without disturbing the conditions in the combustion chamber, the Pennsylvania oil in each crankcase was replaced with the solvent-treated oil "T" and operation continued. The purpose of these tests was to investigate whether the use of this oil would in the course of time remove carbon deposits already accumulated.

The experimental procedure employed in the investigation of carbon formation consisted briefly of testing each car at intervals of about 1,000 miles for detonating characteristics, using a number of gasolines of different octane rating (standard reference fuel "A-3" plus ethyl fluid). With each gasoline, the speed at which the knock disappeared on acceleration was determined as the upper incipient knock point; also the speeds at which the knock appeared (lower incipient knock point) and at which it reached a maximum intensity were noted. Care was exercised in testing to insure reasonably constant conditions of atmospheric temperature and humidity. Carburetion, manifold heating, and jacket temperatures were also kept as nearly constant as possible. Particular attention was paid to ignition timing, both as regards initial distributor setting and proper functioning of the advancing and retarding mechanism. At the beginning of the investigation, the ignition timing of each car was set according to factory recommendations, and the timing was noted to within half a degree of crankshaft rotation. At each subsequent test period, care was taken to check the ignition timing and to adjust it to exactly the initial setting, if necessary. All detonation testing was done on a 10 per cent grade under full-throttle operation.

Differences in detonation characteristics resulting from use of the two types of oil were determined by comparing the octane requirements of each car at its critical speed, defined as the speed at which the maximum knock occurs when using a gasoline which knocks only slightly. This speed approximates that at which the curves of speeds for upper incipient knock, maximum knock, and lower incipient knock versus octane number converge. Although varying considerably between cars, this speed has been found to remain fairly constant for each car during continued operation. The octane requirement at this speed was read from a curve obtained by plotting speed at upper incipient knock versus octane-number requirement.

Figure 5 has been constructed as a summary of the data for typical cars showing the increase in octane requirement with mileage run on the respective oils. Inspection of the figure shows a very large difference in the carbon-forming properties of the Pennsylvania oils and the solvent-treated oil. It will be noted that, in the case of the engines having cast-iron cylinder heads and pistons, the rate of increase in octane number with the Pennsylvania oils is about one point for each 300 to 400 miles driven—until the octane requirement has increased 7 to 14 points; whereas with oil "T" the rate of increase and the total increase are only a fraction of these respective amounts. It is apparent that with the Pennsylvania oils the increase in detonation in about 4,000 miles was sufficient to require a change to gasoline at least one commercial grade higher—and in some cases two grades higher—if the spark setting is to be held constant. With oil "T," the increase in detonation was so much less that a change in commercial grade of gasoline over the period of test was not required.

It is of interest to point out the effect of the aluminum cylinder head and pistons in car No. 5. From observation of this and other makes of cars having aluminum heads and pistons, it appears that, when the combustion chambers are clean, there is little difference between cast iron and aluminum construction in the octane requirements under strictly comparable conditions — but that the aluminum construction is less susceptible to carbon accumulation. No discernible change in octane requirement was noted in the test with the highly solvent-treated oil in the engine equipped with an aluminum head, although some increase in octane requirement did occur in this engine with the Pennsylvania oil.

Figure 6 shows the effect of highly solvent-treated oil in removing carbon deposits previously accumulated by operation on Pennsylvania oil. It will be observed that in each instance the use of oil "T" caused a noticeable reduction in octane requirement; and it is believed that, upon continued service with the latter grade of oil, the octane requirement would approach asymptotically the equilibrium value obtained by the continued use of oil "T" in an initially clean engine.

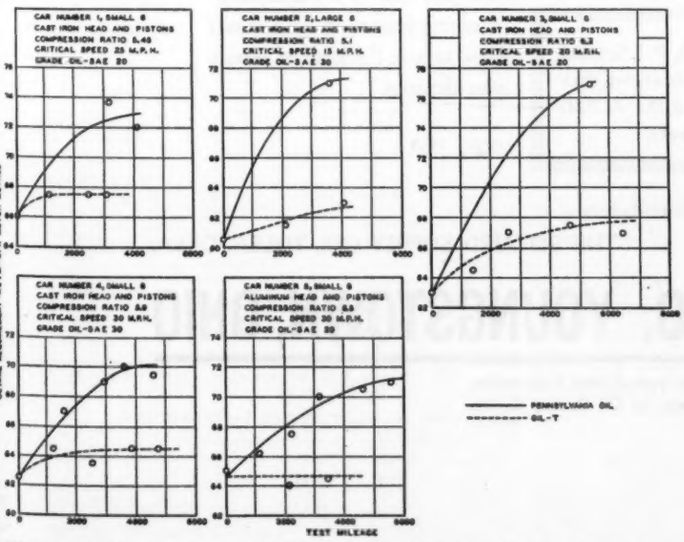


Fig. 5—Effect of oil carbonization on octane requirement of various passenger cars

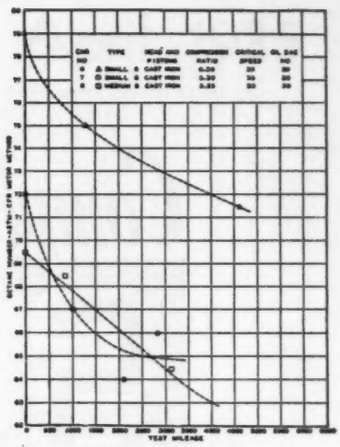


Fig. 6—Reduction in octane requirements by running on oil "T" after carbon had been deposited from Pennsylvania oil

The present investigation of carbon deposition has been concerned principally with an experimental determination of the effect of two general types of oils on octane requirements, but it is believed that a general discussion of the known factors in carbon formation may be of interest. The Conradson - carbon - residue test has had rather wide acceptance as a method for predicting the tendency of an oil to deposit carbon in the combustion chamber, although Bahlke and co-workers[30] have developed a relationship between carbon deposition and the 90 per cent distilled point in a distillation of an absolute pressure of 1 mm. of mercury. This temperature they designate as the "carbonization index." The present investigation did not include a sufficient variety of oils to permit a conclusion to be drawn as to the relative value of the two tests. The solvent-process oil produced from distillates, oil "T," which was found to have a very low-carbonizing tendency in service, has both a low carbon residue and a low carbonization index; while the Pennsylvania oils show much higher values in both of these tests. Data on these two tests for typical samples of the two varieties of oils are included in Table 1, and the distillation characteristics are also shown in Figure 7.

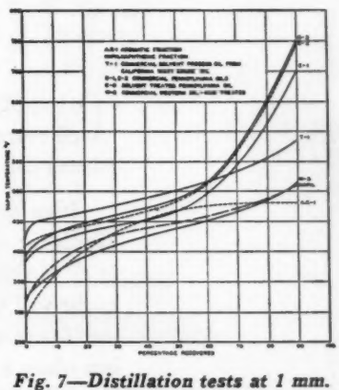


Fig. 7—Distillation tests at 1 mm. absolute pressure

From a comparison of carbonizing tendency with composition, it appears that the tendency of an oil to deposit carbon in the engine is influenced principally by the content of two types of materials; viz., high-boiling, high-molecular-weight components which evaporate so slowly in the combustion chamber that decomposition occurs even though they may be highly paraffinic in character, and nonparaffinic compounds which tend to decompose even though they may not be especially high-boiling. In general, production of an oil as a distillate serves to eliminate the very high-boiling components, and solvent extraction either be-

(Continued on Page 64)

*Author's title, "Service Characteristics of Motor Oils as Related to Composition." Presented at mid-year meeting, A.P.I., Tulsa.

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Bureau of Mines Statistics for the Month of April, 1935

SUPPLY AND DEMAND OF ALL OILS

(Thousands of barrels of 42 gallons)

	April, 1935	March, 1935	April, 1934	Jan.-Apr., 1935	Jan.-Apr., 1934
NEW SUPPLY:					
Domestic production:					
Crude petroleum	78,247	81,488	75,796	311,393	288,770
Daily average	2,614	2,629	2,526	2,595	2,406
Natural gasoline	3,056	3,223	2,926	12,517	11,764
Benzol*	138	153	152	586	573
Total production	81,621	84,864	78,874	324,496	301,107
Daily average	2,721	2,738	2,629	2,704	2,509
Imports†:					
Crude petroleum:					
Bonded warehouses	629	720	213	2,671	861
For domestic use	1,970	1,888	2,632	6,450	10,225
Refined products:					
Bonded warehouses	1,114	970	944	3,868	3,437
For domestic use	737	837	314	3,649	893
Total new supply, all oils	86,071	89,279	83,977	341,134	316,523
Daily average	2,869	2,880	2,766	2,843	2,638
Decrease in stocks, all oils	1,291	‡2,528	224	‡5,390	12,418
DEMAND:					
Total demand	87,362	86,751	83,201	335,744	328,941
Daily average	2,912	2,798	2,773	2,798	2,741
Exports:					
Crude petroleum	3,776	3,281	3,942	12,230	11,323
Refined products	4,305	6,564	7,675	21,110	25,150
Domestic demand:					
Motor fuel	36,076	31,997	32,735	122,567	117,727
Kerosene	3,751	3,959	3,654	16,606	16,271
Gas oil and fuel oil	28,685	30,249	25,476	122,328	120,299
Lubricants	1,802	1,617	1,651	6,273	6,036
Wax	88	75	82	296	332
Coke	406	465	520	2,166	3,117
Asphalt	1,244	709	1,021	3,157	2,294
Road oil	292	145	247	717	880
Still gas (production)	3,916	4,007	3,642	15,244	13,578
Miscellaneous	167	205	183	738	564
Losses and crude used as fuel	2,854	3,478	2,373	12,312	11,370
Total domestic demand	79,281	76,906	71,584	302,404	292,468
Daily average	2,643	2,481	2,386	2,520	2,437
STOCKS:					
Crude petroleum	339,793	339,139	354,350	339,793	354,350
Natural gasoline	5,586	5,252	4,269	5,586	4,269
Refined products	224,159	226,438	231,176	224,159	231,176
Total, all oils	569,538	570,829	589,795	569,538	589,795
Days' supply	196	204	213	204	215

*From Coal Division †Imports of crude as reported to Bureau of Mines; imports of refined products from Bureau of Foreign and Domestic Commerce. ‡Increase.

COMPARATIVE ANALYSES

(Thousands of barrels of 42 gallons)

	April, 1935 Total	April, 1935 Daily av.	March, 1935 Total	March, 1935 Daily av.	Jan.-Apr., 1935	Jan.-Apr., 1934
CRUDE PETROLEUM:						
Runs to stills	75,066	2,502	76,630	2,472	297,969	283,352
MOTOR FUEL:						
Production	35,690	1,190	36,528	1,178	142,038	133,268
Imports:						
Bonded warehouses	.....	.....	.....	.....	20	.....
For domestic use	.....	.....	.....	.....	.....	1
Exports*	1,467	49	2,594	84	7,434	9,228
Stocks, gasoline	58,218	.....	60,405	.....	58,218	61,339
Stocks, natural gasoline	5,586	.....	5,252	.....	5,586	4,269
Domestic demand	36,076	1,203	31,997	1,032	122,567	117,727
KEROSENE:						
Production	4,325	144	5,215	168	19,342	17,691
Imports	.....	.....	.....	.....	.....	.....
Exports	522	17	541	17	2,248	3,155
Stocks	6,886	.....	6,834	.....	6,886	4,822
Domestic demand	3,751	125	3,959	128	16,606	16,271
GAS OIL AND FUEL OIL:						
Production	25,560	852	27,870	899	105,856	105,155
Transfers†	951	32	1,261	41	4,142	3,171
Imports:						
Bonded warehouses	1,114	37	970	31	3,847	3,431
For domestic use	725	24	788	25	3,504	786
Exports	1,318	44	2,345	76	7,691	9,207
Stocks	97,727	.....	99,380	.....	97,727	106,041
Domestic demand	28,685	956	30,249	976	122,328	120,299
Railroad (Class I)‡	($)	($)	3,936	127	¶11,419	¶10,663
Pub. util. pow. plants‡	773	26	796	26	3,251	3,377
Other	27,912	930	25,517	723	107,658	106,259
Bunker oil, foreign	2,323	77	2,606	84	9,377	10,011
Bunker oil, coastwise	2,285	76	2,123	68	8,692	7,301
LUBRICANTS:						
Production	2,309	77	2,251	73	8,763	8,537
Imports	.....	.....	.....	.....	.....	.....
Exports	758	25	773	25	2,795	2,735
Stocks	7,026	.....	7,277	.....	7,026	6,796
Domestic demand	1,802	60	1,617	52	6,273	6,036
WAX (thous. of pounds):						
Production	43,120	1,437	37,240	1,201	152,600	168,280
Imports:						
Bonded warehouses	.....	.....	.....	.....	224	1,504
For domestic use	2,277	76	1,875	60	8,746	18,026
Exports	18,396	613	22,195	716	70,790	71,579
Stocks	144,153	.....	141,809	.....	144,153	91,763
Domestic demand	24,657	822	20,855	673	82,763	93,301
COKE (short tons):						
Production	120,400	4,013	118,800	3,832	465,200	474,400
Stocks	396,500	.....	366,600	.....	396,500	552,900
ASPHALT (short tons):						
Production	250,900	8,363	181,800	5,865	712,200	611,300
Imports (natural)	600	20	7,700	248	20,000	6,900
Stocks	411,400	.....	408,700	.....	411,400	378,300

*Includes benzol 21,100 bbls. in April, 1935. †Net transfers in California. ‡I.C.C. §Not available. ¶January-March. ‖U S Geological Survey

SHIPMENTS OF MOTOR FUEL BY PIPE LINES

(Thousands of barrels of 42 gallons)

	April, 1935	March, 1935	April, 1934	Jan.-Apr., 1935	Jan.-Apr., 1934
Motor fuel turned into lines	*4,126	4,023	3,171	15,427	12,877
Motor fuel delivered from lines	3,841	3,913	3,271	14,706	12,912
Shortage	30	8	8	102	32
Stocks in lines and working tanks end of month	*2,662	2,407	1,248	2,662	1,248

*Includes 214,000 bbls. formerly included in refinery and terminal stocks for East Coast.

GASOLINE PRODUCTION BY THE VARIOUS METHODS, APRIL, 1935

(Thousands of barrels of 42 gallons)

	Straightrun Total	Straightrun Per cent (*)	Straightrun Per cent (†)	Cracked Total	Cracked Per cent (*)	Cracked Per cent (†)	Nat. gaso. Per cent (†)	Gasoline Total	Gasoline Per cent (*)
East Coast	2,580	19.0	46.3	2,957	21.8	53.0	40	5,577	40.8
Appalachian	829	27.0	54.1	686	22.4	44.7	19	1,534	49.4
Ind., Ill., etc.	2,606	24.9	42.3	3,319	31.7	53.8	240	6,165	56.6
Okla., Kans., Mo.	2,285	26.1	46.2	2,230	25.4	45.1	430	4,945	51.5
Texas Inland	1,470	32.5	61.0	722	15.9	29.9	219	2,411	48.4
Texas Gulf	3,038	20.1	46.8	3,334	22.1	51.4	117	6,489	42.2
Louisiana Gulf	694	21.5	59.5	447	13.8	38.3	26	1,167	35.3
Ark. and La. Inland	349	24.8	53.5	277	19.7	42.4	27	653	44.5
Rocky Mountain	396	25.8	48.6	356	23.2	43.7	63	815	49.0
California	2,921	21.8	58.8	1,273	9.5	25.6	778	4,972	31.3
Total	17,168	22.9	49.4	15,601	20.8	44.9	1,959	34,728	43.7

*Per cent of crude run. †Per cent of total gasoline output.

PRODUCTION OF MOTOR FUEL

(Thousands of barrels of 42 gallons)

	April, 1935 Total	April, 1935 Daily av.	March, 1935 Total	March, 1935 Daily av.	Jan.-Apr., 1935	Jan.-Apr., 1934
Refinery gasoline:						
Straightrun	17,168	572	17,291	558	67,290	66,568
Cracked	15,601	520	16,071	517	62,459	55,833
Natural gasoline:						
Production	3,056	102	3,223	104	12,517	11,764
Deduct losses	273	9	170	6	814	1,470
Benzol	138	5	153	5	586	573
Total motor fuel	35,690	1,190	36,528	1,178	142,038	133,268

(Continued on Next Page)

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RECORD OF WELLS FOR IMPORTANT FIELDS AND DISTRICTS, APRIL, 1935*

	Completions			Total initial prod. (bbls.)	Aver. initial prod. (bbls.)	Drilling end month
	Oil	Gas	Dry			
Texas	752	21	212	813,300	1,080	1,102
East Texas	400	...	9	704,000	1,760	226
Gulf Coast	49	4	48	10,500	215	121
Panhandle	45	7	5	29,300	650	151
West Texas	46	1	19	24,300	530	171
California	56	...	23	49,700	890	270
Kettleman Hills	...	...	...	.....	.....	25
Long Beach	9	...	1	2,800	310	43
Oklahoma	101	6	46	59,300	585	452
Pontotoc Co. (Fitts)	15	...	1	12,200	815	62
Seminole district	27	1	9	11,200	415	60
Louisiana	26	13	27	13,700	525	136
Gulf Coast	17	2	18	13,300	785	74
Rest of State	9	11	9	400	45	62
Other states	313	89	75	129,500	415	1,112
Total U. S., Apr., 1935	1,248	129	383	1,065,500	855	3,072
Mar., 1935	1,209	105	347	1,421,800	1,175	2,781
Apr., 1934	914	72	287	882,100	965	2,749
Jan.-Apr., 1935	4,564	493	1,443	4,124,100	905	3,072
Jan.-Apr., 1934	3,564	354	1,184	3,465,600	970	2,749

*From The Oil and Gas Journal and California office of American Petroleum Institute.

PRODUCTION AND DISTRIBUTION OF NATURAL GASOLINE

(Thousands of barrels of 42 gallons)

	April, 1935		March, 1935		Jan.-Apr., 1935	Jan.-Apr., 1934
	Total	Daily av.	Total	Daily av.		
Production	3,056	102	3,223	104	12,517	11,764
Decrease in all stocks	.....	.....	.....	.....	.....	.....
Total	3,056	102	3,223	104	12,517	11,764
Blended at refineries	1,909	64	1,946	63	8,136	7,863
Run through pipe lines in California	50	2	46	1	189	472
Jobbers, exports, etc.	490	16	590	19	2,008	1,380
Increase in all stocks	334	11	471	15	1,370	575
Losses	273	9	170	6	814	1,470
Total	3,056	102	3,223	104	12,517	11,764

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PRODUCTION OF CRUDE PETROLEUM BY STATES AND PRINCIPAL FIELDS

(Thousands of barrels of 42 gallons)

	April, 1935		March, 1935		Jan.-Mar., 1935	Jan.-Mar., 1934
	Total	Daily av.	Total	Daily av.		
Arkansas	924	30.8	970	31.3	3,620	3,649
California:						
Huntington Beach	1,164	38.8	1,230	39.7	4,698	4,718
Kettleman Hills	1,588	53.0	2,021	65.2	7,611	6,375
Long Beach	1,956	65.2	2,035	65.6	7,764	7,350
Santa Fe Springs	1,108	36.9	1,202	38.8	4,567	5,027
Rest of State	8,358	278.6	8,943	288.5	34,435	32,470
Total California	14,174	472.5	15,431	497.8	59,075	55,940
Colorado	150	5.0	152	4.9	535	337
Illinois	338	11.3	370	11.9	1,335	1,497
Indiana	61	2.0	65	2.1	241	260
Kansas	4,550	151.7	4,821	155.5	17,794	14,719
Kentucky	445	14.8	438	14.1	1,733	1,408
Louisiana:						
Gulf Coast	3,096	103.2	2,921	94.2	11,284	5,393
Rest of State	708	23.6	684	22.1	2,740	3,180
Total Louisiana	3,804	126.8	3,605	116.3	14,024	8,573
Michigan	1,179	39.3	1,063	34.3	4,289	3,406
Montana	332	11.1	325	10.5	1,332	880
New Mexico	1,639	54.6	1,661	53.6	6,365	5,247
New York	350	11.7	336	10.8	1,362	1,160
Ohio:						
Central and Eastern	274	9.1	266	8.6	1,052	1,034
Northwestern	82	2.8	79	2.6	301	315
Total Ohio	356	11.9	345	11.2	1,353	1,349
Oklahoma:						
Oklahoma City	5,013	167.1	4,754	153.3	18,917	21,394
Seminole	3,970	132.3	4,035	130.2	15,162	12,667
Rest of State	6,670	222.4	6,859	221.3	26,168	25,800
Total Oklahoma	15,653	521.8	15,648	504.8	60,247	59,861
Pennsylvania	1,380	46.0	1,348	43.5	5,246	4,513
Texas:						
Gulf Coast	5,124	170.8	5,296	170.9	20,410	19,119
West Texas	4,523	150.8	4,735	152.7	18,079	15,760
East Texas	14,131	471.0	15,319	494.2	57,515	58,537
Panhandle	1,801	60.0	1,885	60.8	7,243	6,128
Rest of State	6,107	203.6	6,316	203.7	24,119	21,363
Total Texas	31,686	1,056.2	33,551	1,082.3	127,366	120,907
West Virginia	336	11.2	332	10.7	1,309	1,327
Wyoming:						
Salt Creek	530	17.7	536	17.3	2,104	2,135
Rest of State	536	17.8	487	15.7	2,051	1,599
Total Wyoming	1,066	35.5	1,023	33.0	4,155	3,734
Other*	4	.....	4	.....	12	3
Total United States	78,427	2,614.2	81,488	2,628.6	311,393	288,770

*Includes Missouri, Tennessee, and Utah.

PRODUCTION OF CRUDE PETROLEUM BY DISTRICTS

(Thousands of barrels of 42 gallons)

	April, 1935		March, 1935		Jan.-Apr., 1935	Jan.-Apr., 1934
	Total	Daily av.	Total	Daily av.		
Appalachian:						
Pennsylvania Grade	2,202	73.4	2,149	69.3	8,434	7,506
Other (inc. Kentucky)	583	19.4	571	18.4	2,268	1,936
Lima-N. E. Ind.-Mich.	1,261	42.1	1,142	36.9	4,590	3,721
Ill.-S. W. Ind.	399	13.3	435	14.0	1,576	1,757
Mid-Continent:						
N. La. and Ark.	1,632	54.4	1,654	53.4	6,360	6,829
W. Texas-S. E. N. Mex.	6,141	204.7	6,362	205.2	24,323	20,872
East Texas	14,131	471.0	15,319	494.2	57,515	58,537
Other (Okla., Kans., N. Tex., etc.)	28,111	937.1	28,670	924.8	109,403	102,071
Gulf Coast	8,220	274.0	8,217	265.1	31,694	24,512
Rocky Mountain	1,569	52.3	1,534	49.5	6,143	5,086
California	14,174	472.5	15,431	497.8	59,075	55,940
Other*	4	.....	4	.....	12	3
Total	78,427	2,614.2	81,488	2,628.6	311,393	288,770

*Includes Missouri, Tennessee, and Utah.

STOCKS OF CRUDE PETROLEUM

(Thousands of barrels of 42 gallons)

	April 30, 1935	March 31, 1935	April 30, 1934
At refineries by location:			
East Coast: Domestic	12,327	11,989	9,783
Foreign	2,147	2,083	2,694
Appalachian	1,639	1,544	1,741
Indiana, Illinois, Kentucky, Michigan	4,687	4,476	4,342
Oklahoma, Kansas, and Missouri	6,229	6,326	6,288
Texas: Inland	1,422	1,413	2,090
Gulf Coast: Domestic	11,148	10,302	10,651
Foreign	610	809	177
Louisiana Gulf Coast: Domestic	3,979	3,503	3,640
Foreign	946	1,055	654
Arkansas and Inland Louisiana	941	854	739
Rocky Mountain	13,268	13,297	12,692
California	6,729	7,703	9,233
Total	66,072	65,354	64,715
At refineries by origin:			
Pennsylvania Grade	1,336	1,245	1,458
Other Appalachian (inc. Kentucky)	635	623	569
Lima-N. E. Indiana-Michigan	378	359	444
Illinois-S. W. Indiana	148	123	172
N. Louisiana and Arkansas	2,208	2,116	2,622
West Texas and S. E. New Mexico	4,557	3,976	3,525
East Texas	7,531	6,735	9,241
Oklahoma, Kansas, N. Texas, etc.	17,740	17,720	15,870
Gulf Coast	7,866	7,533	5,395
Rocky Mountain	13,241	13,274	12,661
California	6,729	7,703	9,233
Foreign	3,703	3,947	3,525
Total	66,072	65,354	64,715
Pipe line and tank farm:			
Pennsylvania Grade	2,626	3,504	3,659
Other Appalachian (inc. Kentucky)	519	505	870
Lima-N. E. Indiana-Michigan	1,084	1,031	1,252
Illinois-S. W. Indiana	11,476	11,416	11,001
N. Louisiana and Arkansas	8,119	7,959	8,626
West Texas and S. E. New Mexico	26,503	26,338	26,112
East Texas	25,285	25,487	36,098
Oklahoma, Kansas, N. Texas, etc.	132,639	133,556	144,136
Gulf Coast	13,676	12,843	9,531
Rocky Mountain	15,111	15,061	15,228
California	26,837	27,452	24,656
Total	264,874	265,152	281,179
Lease (producers') stocks	8,847	8,633	8,456
Total refinable crude in the United States	339,793	339,139	354,350

(Continued on Next Page)

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- —that the nature of the oil man's business justifies only the best that money can buy or modern science build in the way of supplies and equipment.
- —that within the area of our operations store points must be maintained where the oil man needs them, without reference to our immediate profit.

We seem to be on the right track. Old customers are loyal. New faces find their way to our stores. New names appear on our ledgers.

FRICK-REID
SUPPLY CORPORATION

Pittsburgh, Pa. Tulsa, Okla.

MOVEMENT OF CRUDE OIL AND REFINED PRODUCTS TO EASTERN PORTS IN U. S.

(Thousands of barrels of 42 gallons)

	April, 1935	March, 1935	April, 1934	Jan.-Apr., 1935	Jan.-Apr., 1934
California to East Coast:					
Gasoline	843	466	636	2,430	2,058
Kerosene	80	210	204	743	751
Gas oil and fuel oil	.....	116	1,653	564	6,585
Lubricants	9	2	12	24	23
Miscellaneous	73	3	1	152	21
Total	1,005	797	2,506	3,913	9,438
Gulf to East Coast*:					
Crude	11,431	†13,054	(‡)	48,717	(‡)
Gasoline§	6,543	6,152	(‡)	23,492	(‡)
Kerosene	787	1,467	(‡)	5,604	(‡)
Gas oil and fuel oil	4,266	†3,323	(‡)	19,867	(‡)
Lubricants	173	130	(‡)	610	(‡)
Miscellaneous	.....	8	(‡)	25	(‡)
Total	23,200	24,134	(‡)	98,315	(‡)
Foreign crude to East Coast:					
Colombia	.....	.....	351	.....	1,831
Ecuador	.....	.....	.....	.....	79
Mexico	211	134	129	483	1,536
Trinidad	.....	59	.....	59	.....
Venezuela	1,947	1,500	2,082	6,337	6,945
Total	2,158	1,693	2,562	6,879	10,391
Foreign crude to Gulf Coast:					
Colombia	224	443	.....	1,421	.....
Mexico	55	301	211	356	517
Venezuela	52	171	72	465	178
Total	441	915	283	2,242	695

*From Division of Investigations, Department of the Interior. †Revised. ‡Not available. §Includes natural gasoline.

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PUMPS &

SUCKER RODS

SAVE YOU MONEY

ON EVERY

PUMPING WELL

AXELSON MANUFACTURING CO.
P. O. Box 710, Vernon Station, Los Angeles, Calif.
St. Louis 50 Church St., New York Tulsa
Mid-Continent and Eastern Distributor: Frick-Reid Supply Corp.
Rocky Mountain Distributor: Great Northern Tool & Supply Co.

INDICATED DOMESTIC DEMAND FOR CRUDE PETROLEUM

(Thousands of barrels of 42 gallons)

Domestic petroleum by fields of origin:	April, 1935 Total	April, 1935 Daily av.	March, 1935 Total	March, 1935 Daily av.	Jan.-Apr., 1935	Jan.-Apr., 1934
Appalachian:						
Pennsylvania Grade	1,984	66 1	2,093	67.5	8,317	7,981
Other (inc. Kentucky)	557	18.9	603	19.5	2,292	1,925
Lima-N. E. Ind.-Mich.	1,189	39.6	1,081	34.9	4,415	3,795
Ill.-S. W. Ind.	304	10.1	387	12.5	1,427	1,770
Mid-Continent:						
N. La. and Ark.	1,390	46.3	1,422	45.9	6,069	7,452
W. Texas-S. E. N. Mex.	5,335	177.8	6,577	212 2	23,056	24,196
East Texas	13,517	450.6	14,856	479.2	55,820	59,269
Other (Okla., Kans., N. Tex., etc.)	28,948	964.9	27,878	899.3	111,361	96,414
Gulf Coast	7,065	235.5	7,732	249.4	28,941	25,561
Rocky Mountain	1,567	52.2	1,476	47.6	5,829	4,674
California*	14,710	490.3	14,825	478.2	57,690	53,628
Other†	4	.....	4	.....	12	3
Total demand	76,570	2,552.3	78,934	2,546.2	305,229	286,661
Exports	3,776	125.9	3,281	105.8	12,230	11,323
Domestic demand	72,794	2,426.4	75,653	2,440.4	292,999	275,338
Foreign petroleum	2,843	94.8	2,161	49.7	9,209	10,616
Total domestic demand	75,637	2,521.2	77,814	2,510.1	302,208	285,954

*Demand less net transfers from crude. †Includes Missouri, Tennessee, and Utah.

STOCKS HELD BY REFINING COMPANIES, APRIL 30, 1935

(Thousands of barrels of 42 gallons)

	Finished Gasoline: At refineries	Finished Gasoline: Bulk and pipe lines	Unfinished gasoline	Total gasoline	Kerosene	Gas oil and distillate fuel oils
East Coast	6,873	11,455	1,002	19,335	1,852	3,223
Appalachian	1,346	887	361	2,594	207	184
Ind., Ill., Ky., etc	6,674	2,986	783	10,443	577	2,062
Okla., Kans., Mo.	4,003	2,129	676	6,808	374	799
Texas Inland	1,666	90	245	2,001	136	173
Texas Gulf	6,529	441	1,796	8,766	1,871	2,931
Louisiana Gulf	913	527	220	1,660	466	1,486
Ark. and La. Inland	242	129	37	408	24	91
Rocky Mountain	1,136	0	113	1,249	160	157
California	8,480	1,707	942	11,129	1,219	5,126
Total	37,897	20,351	6,175	64,393	6,586	16,232

	Residual Fuel oil	Lubricants	Wax (thousands of lbs.): Crude scale	Wax (thousands of lbs.): Refined	Wax (thousands of lbs.): Total
East Coast	5,719	2,561	24,570	31,139	55,709
Appalachian	313	891	18,052	2,832	20,884
Ind., Ill., Ky., etc.	2,516	510	17,165	1,792	18,957
Okla., Kans., Mo.	2,312	551	5,047	1,109	6,156
Texas Inland	1,886	107	0	175	175
Texas Gulf	6,485	1,599	1,034	23,407	24,441
Louisiana Gulf	2,273	93	878	1,075	1,953
Ark. and La. Inland	604	16	0	0	0
Rocky Mountain	469	93	14,646	1,232	15,878
California	58,818	905	0	0	0
Total	81,495	7,026	81,392	62,761	144,152

	Coke (tons)	Asphalt (tons)	Road oil	Miscellaneous	Other unfinished	Natural gasoline
East Coast	10,400	121,300	20	51	8,122	249
Appalachian	7,200	15,500	12	40	1,999	9
Ind., Ill., Ky., etc.	51,900	110,900	178	22	5,833	45
Okla., Kans., Mo.	36,600	8,400	173	29	5,581	80
Texas Inland	19,200	0	71	9	1,104	10
Texas Gulf	88,700	10,500	15	26	10,992	286
Louisiana Gulf	20,100	33,600	15	3	1,420	2
Ark. and La. Inland	100	42,600	13	1	245	4
Rocky Mountain	77,400	9,200	289	7	1,790	21
California	84,900	58,400	194	49	5,053	2,832
Total	396,500	411,400	980	237	42,149	3,536

Grand total stocks refined products 224,159,000 bbls.

RUNS TO STILLS AND OUTPUT OF REFINERIES, APRIL, 1935

(Thousands of barrels of 42 gallons)

Input:	Crude runs: Domestic	Crude runs: Foreign	Crude runs: Total	Unfin'hed rerun (net): Crude gasoline	Unfin'hed rerun (net): Other	Natural gasoline
East Coast	11,469	2,086	13,555	93	215	40
Appalachian	3,068	0	3,068	42	44	19
Ind., Ill., Ky., etc.	10,475	0	10,475	97	421	240
Okla., Kans., Mo.	8,760	0	8,760	112	67	430
Texas Inland	4,526	0	4,526	6	68	219
Texas Gulf	14,573	535	15,108	152	161	117
Louisiana Gulf	3,016	212	3,228	21	100	26
Ark. and La. Inland	1,408	0	1,408	1	10	27
Rocky Mountain	1,535	0	1,535	7	22	63
California	13,403	0	13,403	37	239	*783
Total	72,233	2,833	75,066	290	1,125	1,964

Output:	Gasoline	Kerosene	Gas oil and distillate fuels	Residual fuel oils	Lubricants	Wax (thousands of pounds)
East Coast	5,577	743	1,244	3,408	638	18,760
Appalachian	1,534	240	161	391	436	3,120
Ind., Ill., Ky., etc.	6,165	444	735	1,410	212	3,360
Okla., Kans., Mo.	4,945	631	689	1,691	297	3,360
Texas Inland	2,411	232	279	1,340	24	280
Texas Gulf	6,489	1,124	1,425	3,928	478	5,040
Louisiana Gulf	1,167	382	624	556	48	2,240
Ark. and La. Inland	653	82	105	431	12	0
Rocky Mountain	815	68	115	297	16	1,960
California	4,972	379	1,806	5,866	148	0
Total	34,728	4,325	7,183	19,328	2,309	43,120

Output (cont'd.):	Coke (tons)	Asphalt (tons)	Road oils	Still gas	Miscellaneous	Shortage
East Coast	12,600	105,500	31	755	51	130
Appalachian	1,600	8,000	0	201	21	108
Ind., Ill., Ky., etc.	51,400	46,500	116	798	15	29
Okla., Kans., Mo.	18,200	3,500	31	449	27	263
Texas Inland	2,000	0	29	90	8	247
Texas Gulf	16,600	18,700	5	1,040	15	194
Louisiana Gulf	8,800	20,200	15	146	2	30
Ark. and La. Inland	200	8,500	21	37	5	30
Rocky Mountain	9,000	2,400	87	84	1	23
California	0	37,600	125	316	†31	69
Total	120,400	250,900	460	3,916	174	1,056

*Includes 50,000 bbls. run through pipe lines. †Includes 5,000 bbls. liquefied petroleum gas made from natural gasoline.

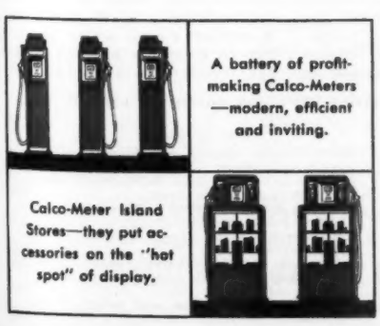
CRACKED OPERATIONS

	Barrels
Fresh cracking stock charged to stills; crude	4,459,000
Fresh cracking stock charged to stills; other oils	35,197,000
Gasoline produced by cracking	15,601,000
Fuel oil produced by cracking	14,134,000

(Continued on Next Page)

CALCO-METER ISLANDS

ARE TREASURE ISLANDS—TO YOU!



A battery of profit-making Calco-Meters—modern, efficient and inviting.

Calco-Meter Island Stores—they put accessories on the "hot spot" of display.

70% Gallonage INCREASE in the NORTHWEST

Says a Spokane, Washington station: "We increased our gallonage with the Calco-Meter over 70%." And that's the reason why Calco-Meter Islands are Treasure Islands to station owners. Increased gallonage! Increased accessory sales! Increased profit!

INCREASED GALLONAGE—as high as 70%—actual increases reported by Calco-Meter users.

QUICKER ACCESSORY TURNOVER—The Calco-Meter Island Store puts the accessories on the "hot spot" of station display. Makes every gasoline customer an accessory prospect.

MODERN DESIGN—strikingly modern, and in such good taste that it will remain modern for years. No ornate fixtures that "date" your pump . . . cost you extra . . . will cost you still more to remove.

ERROR-PROOF, AUTOMATIC PRICE CALCULATION . . . including tax.

INTERLOCKING PRICE MECHANISM . . . posts price per gallon of computation.

TOTALIZER . . . gives total gallons and dollar sales, daily, weekly or monthly.

NEW MONO-BLOC CONSTRUCTION . . . a compact pumping unit at the base where the weight belongs . . . saves electricity . . . makes servicing easier.

GILBERT & BARKER MANUFACTURING COMPANY, SPRINGFIELD, MASSACHUSETTS

Mail coupon for "Treasure Island"—Positive Source of Service Station Profit

OG-80

Name.....Address.....

STOCKS OF CRUDE PETROLEUM BY STATES AND BY LOCATION

(Thousands of barrels of 42 gallons)

	April 30, 1935				March 31, 1935			
	Refinery	Tank farm and pipe line	Lease	Total	Refinery	Tank farm and pipe line	Lease	Total
Arkansas	736	3,174	280	4,184	696	3,239	290	4,225
California	6,729	26,837	1,811	35,377	7,703	27,452	1,717	36,872
Colorado	301	97	30	428	319	89	30	438
Georgia*	613	.....	.....	613	691	.....	.....	691
Illinois	1,475	10,783	100	12,358	1,345	10,849	90	12,284
Indiana	1,561	2,048	8	3,619	1,567	1,972	8	3,547
Kansas	2,823	10,213	420	13,161	2,581	10,525	400	13,506
Kentucky	523	395	40	958	508	376	40	924
Louisiana‡	5,136	6,105	390	11,631	4,716	6,217	380	11,313
Maryland	838	.....	.....	838	1,184	.....	.....	1,184
Massachusetts§	1,195	.....	.....	1,195	1,227	.....	.....	1,227
Michigan	148	691	80	919	136	645	80	861
Missouri¶	177	3,307	.....	3,484	175	3,253	.....	3,428
Montana	446	1,005	90	1,541	209	998	85	1,392
New Jersey	6,463	326	.....	6,791	6,197	385	.....	6,582
New Mexico	10	388	210	708	3	437	250	690
New York	1,428	143	18	1,594	1,190	133	18	1,341
Ohio	1,191	7,049	80	8,320	1,107	7,148	80	8,335
Oklahoma	3,524	73,972	1,660	79,157	3,570	74,657	1,630	79,857
Pennsylvania	5,295	1,913	110	7,323	4,855	1,709	105	6,669
Texas	13,180	100,545	2,910	116,635	12,524	99,246	2,900	114,670
Utah	225	.....	.....	225	236	.....	.....	236
West Virginia	78	1,921	145	2,144	85	1,895	145	2,125
Wyoming‖	12,286	13,939	365	26,590	12,430	13,927	385	26,742
Total United States	66,072	264,874	8,847	339,793	65,354	265,152	8,633	339,139

*Includes South Carolina and Virginia. †Includes Tennessee. ‡Includes Alabama. §Includes Rhode Island. ¶Includes Iowa. ‖Includes Nebraska and South Dakota.

STRATIGRAPHIC SOCIETY

WICHITA, Kans., June 17.—The Wichita Stratigraphical Society has been formed to discuss purely technical matters and paleontological features associated with Kansas development.

Jerry Upp, Amerada Petroleum Corp., is president; Olive Hoffman, Phillips Petroleum Co., vice president; and Lynn Morrow, Magnolia Petroleum Co., secretary-treasurer. The society will hold its first regular meeting June 18. It plans to co-operate with the Tulsa, Fort Worth and Houston stratigraphical units.

WHY A "TOLEDO" No. 1BR?

1" TO 2" RATCHET THREADER

1. BETTER WORK HOLDER

Three chuck jaws 1¾-inch wide clamp tool rigidly, accurately to the pipe even though the pipe is cut off crooked. Three large wing head thumb screws assure stronger, more positive grip. Indexed guide posts permit easier centering. Jaws will not mar brass pipe, and will take a 2-inch coupling for the cutting of close nipples.

2. STURDIER CONSTRUCTION

Stronger work holder. Hardened steel taper pins. No soft metal parts to wear. Longer taper pin bearings—no danger of working loose or stretching. No skimping in weight to weaken tool and shorten its length of service.

3. BETTER BALANCE

Ratchet handle near center of tool, making a properly balanced tool as it is put on the pipe. Easier handling.

4. EASIER OPERATION

All moving parts accurately machined, perfectly fitted. Dies hobbed with correct clearance for each size pipe, and ground with proper lip angle, assure easy cutting. "TOLEDO'S" are the only tools using 2-inch high speed steel dies which prevents burning cutting edges on account of the higher peripheral speed when threading 2-inch pipe.

5. SIMPLE TIME-PROVEN CONSTRUCTION

The original "TOLEDO" design of the taper pin and receding die principle has never been improved upon or equalled. "TOLEDO," the pioneer of all easy cutting pipe tools, bases its design and manufacture upon the result of over 30 years experience. No yearly models to become obsolete, but constant improvement as "TOLEDO'S" experience dictates.

6. "TOLEDO" DIES ONLY FOR "TOLEDO" TOOLS

Genuine "TOLEDO" dies should be used only in genuine "TOLEDO" tools. Only "TOLEDO" experience can create and produce the superior quality built into each set of genuine "TOLEDO" trademarked dies, which assures the purchaser the service and satisfaction to which he is entitled when buying extra dies for his "TOLEDO" tools. Look for the trademark and insist upon it.

SPECIFY A "TOLEDO" No. 1BR FOR YOUR NEXT THREADING TOOL. YOU WILL FIND IT THE BEST PIPE THREADER YOU HAVE EVER USED.

THE TOLEDO PIPE THREADING MACHINE CO.

TOLEDO, OHIO New York Office, 72 Lafayette Street

"TOLEDO"

Alloy Steels Used in Oil Refinery Distillation

(Continued from Page 52)

The resistance of alloys to oxidation is as a general rule determined by the chromium content of the steel, other things being equal. Austenitic steels, therefore, are the most oxidation resistant; however, pearlitic steels with a stabilized low chromium content such as 4-6 chrome-moly-titanium steels will also show marked oxidation resistant properties. Figure 5 and Table 2 show the relative oxidation resistant properties of the different tube materials at present in use. The tubes shown in the photograph are numbered to correspond to the numbers and descriptions in Table 2. The effect of composition and resistance to oxidation is very clearly shown in Figure 5. The oxidation resistance of a number of alloys are shown on the curve, Figure 6. The photograph and data accompanying it were supplied through the courtesy of Babcock and Wilcox.

Steel Coatings

To obtain a comparatively inexpensive tube that will withstand oxidation and corrosion and yet have a high creep strength and stability at high temperatures, high creep metal is made resistant to corrosion and oxidation by coating with aluminum. Calorizing (coating with aluminum) was the earliest commercial method of protecting steels and alloy steels from oxidation and corrosion and the only one used extensively at present.

On tubes or other metallic parts subjected to high temperature and internal stress the early attempts of applying such coating were unsuccessful primarily because of the brittleness of the coatings and the weakness and instability of the material coated. Most of the early day coatings would crack even if the material crept 1 per cent. The carbon steel commonly used for this purpose was not a suitable material because it crept more than 1 per cent under the high metal temperature conditions to which these coated tubes were subjected. As a general rule, the coated tubes were applied in the zones of the furnace where an uncoated tube would not stand up. However, with material below the coating, the coated tube went almost as fast if not faster, because the cracking of the coating induced zones of weakness in the virgin metal itself.

Modern coated tubes are produced by applying the coating to a high creep stress material which will not creep appreciably at temperatures up to 1,200° F. when the tube thickness is properly selected. The coatings are also of a different nature in that they form an alloy with the outer surface of the steel. The joint between the coating and the base metal is much more intimate with the crystals of the coating layer and the base metals interlocking with each other. This is shown in Figure 7, which is a microphotograph of a calorized D.M. tube after service at high temperatures. While the dark line at the boundary of the coating and the base metal consists primarily of the segregated carbides from the outer surface of the base metal and does represent a line of weakness, the joint is sufficiently intimate to permit satisfactory rolling of tubes in headers without destroying the protective coating or the joint between the coating and the base metal.

A less intimate but a satisfactory method of coating for vessels such as reaction chambers, flash chambers, etc., has been recently developed in which the protective coating (aluminum), low or high chrome steel or any other metal that can be drawn into a wire, is applied to the steel by spraying with or without thermal treatment after the application. The success of sprayed or metallized protection depends primarily upon the properties of the surface before the spray is applied. The base metal surface must have sharp edges with which the sprayed coating should interlock to give good adhesion. Subsequent thermal treatment such as annealing of the vessel after metallizing induces a further bond between the metal spray and the base metal by forming a solid solution of the spray and the base metal at the border.

Figure 8 shows two photographs of metallized aluminum coated plates supplied through the courtesy of the Metallizing Co. A is a satisfactory coating while B is unsatisfactory because of insufficient interlocking of surfaces.

The metallized protection is rather thin, normally up to 0.005 as against 0.025-0.003, a normal calorized layer. Metallizing therefore is confined to vessels subjected to corrosion where very little if any mechanical cleaning is employed which may injure the protection. Where mechanical cleaning of the vessel of coke adhering to the surface is a normal operation, welding of alloy sheets to the base metal before fabrication is most commonly used, and is applied to any thickness of the base metal material up to 5-inch with a protective coating varying from one-tenth of an inch up to one-fourth inch if desired.

Still another method of protecting materials against corrosion by applying the protecting surface is cladding of the base metal with a corrosion resistant material such as 18-8. The protective metal is intimately attached to the base metal by a partial solid solution of the alloy protective metal with the base metal while the base metal is made into an ingot.

Rolling and mechanical working of the billet to the necessary thickness increases the adhesion of the alloy to the base metal so that the composite plate can be rolled and fabricated in any necessary manner without breaking the bond between the two metals.

A heater for petroleum refining requires a number of alloy metallic fixtures primarily for supporting the tube banks in the furnace. These alloys must possess considerable strength at temperatures ranging from 1,400-2,200° F. and withstand oxidation and corrosion from the sulphur in the products of combustion. There are a number of chrome-nickel alloys available for this purpose in cast form and the proportion of chrome and nickel in the alloy is determined primarily by the relationship between the strength and oxidation and corrosion resistance requirements of the heater. Figure 9 (F. A. Fahrenwald, Iron and Steel Engineer, May, 1934) shows graphically the influence of the different alloying elements on the strength of the alloy castings at high temperatures. While the nickel increases the workability of the metal as to ease of casting, etc., it makes the metal subject to corrosion by high-sulphur gases and therefore as a general rule is kept

TABLE 2—OXIDATION TEST—250 HOURS AT 1,200° F.

No.	Material—	Type of scale	Loss, %	Metal Index
1	.08-.18% C Steel, plain	Heavy, many layer, blue-black, shiny with exfoliation	9.10	1
2	4-6% Cr, plain	Light brown inner, blue outer, fairly adherent	1.76	1
3	4-6% Cr, .50% Mo.	Medium blue-red outer, brown inner layer, some exfoliation	1.55	1
4	4-6% Cr, 1.00% W	Nonadherent, many layer, brownish-red with exfoliation	1.19	7
5	4-6% Cr-Ti-Low Carbon	Blue-black, tightly adherent, shiny	.28	22
6	4-6% Cr-Mo-Ti-Low Carbon	Blue tinged with red, adherent, dull and rough, adherent	.42	21
7	4-6% Cr-Ti-High Carbon	Blue-black, mixed shiny and rough, adherent	.38	21
8	4-6% Cr-Mo-Ti-High Carbon	Light blue tinged with red, shiny and rough, adherent	.42	22
9	8-10% Cr, .15% C	Blue and red, fairly rough, adherent	.18	56
10	8-10% Cr, .15% C, 1.5% Mo.	Blue and red (more red than 9), rough, very slight exfoliation	.44	21
11	12-14% Cr, .15% C	Brownish, shiny, very light and adherent	.019	476
12	18-8 — .07% C.	Bluish brown, shiny, very light and adherent	None	...

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Stabilog control has every essential for balanced control (1) Highly Responsive Measuring Elements (2) Wide Throttling Range (sensitivity) and (3) RESET. Both Vapor Pressure and Pyrometric measuring systems available.

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STRAIGHT TALK.... about CROOKED HOLES

. . . . and how to avoid them with the SURWEL Clinograph

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549 East Bixby Road
(3800 Block—Atlantic Ave.)
(U. S. Patents 1,124,868, 1,812,994, 1,959,141, 1,960,838, others pending.)

to the minimum permissible for the strength and workability required.

Alloys in Cracking Equipment

Because of the more severe conditions employed in cracking processes in respect to temperatures and pressures, the requirements for special alloys are more exacting here than in other refining operations. The furnace tubes are perhaps the most important parts of this equipment so far as the use of special alloys is concerned. Overheating and oxidation have frequently been known to be causes of failure. Even where corrosion and oxidation are absent a tube may be overheated to the extent that its tensile strength may be reduced and bulging occurs, making removal of the tube necessary. Where the tubes are subjected to conditions resulting in oxidation or corrosion the special alloy or coated tubes must be employed.

Plain carbon steel tubes have been found satisfactory in many cases both in respect to safety and length of operation. The initial cost is much below that of the special alloy tubes.

As has been pointed out previously, failure of either the plain steel tubes or of the special alloy steel tubes may not necessarily be caused by internal corrosion or erosion. In this connection, corrosion superimposed by erosion is an important factor in failure and in some cases alloy bends are used with plain carbon steel tubes to overcome failure because of their high turbulency at these points.

In connection with other elements such as tube supports for low temperatures, cast iron may sometimes be employed. For intermediate temperatures calorizing is useful, and for high temperatures alloy tubes are usually employed. The alloys the the usual chromium-nickel steels containing 26-30 per cent chromium, 8-14 per cent nickel and usually less than 0.75 per cent carbon. For heaters and plugs special chromium-nickel steel alloys may be employed, usually of the same composition as the tubes themselves. The chromium-nickel steel alloys may also be used for special piping such as the transfer line, vapor line, liquid level lines and residuum lines. The same applies to parts of the hot oil pump, valves, bolts, nuts and gaskets where exposed to high temperatures.

The use of minor percentages of elements in steels, each selected for its particular effect upon the alloy having in mind the use to which it is to be employed, calls for a thorough study and intelligent application of modern metallurgy and metallography in the selection of the alloy and the manner in which it is fabricated. Some judgment must be exercised in regard to the economics involved, but where there is any question of safety, or where experience has shown it to be best, a suitable alloy must be employed.

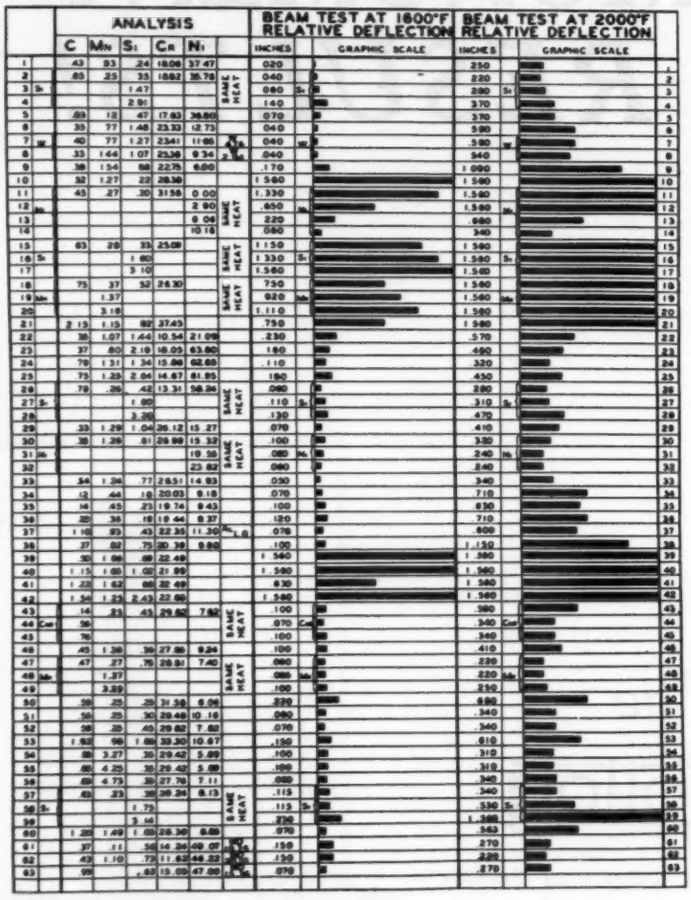

Fig. 9—Beam test result on 63 alloys of steel with varying quantities of carbon, manganese, silicon, chromium and nickel

CORROSION CAUSES

The second edition of Frank N. Speller's book on "Corrosion—Causes and Prevention" is a completely revised edition bringing to date a review of the literature on this subject. The first edition published in 1926 was recognized as the outstanding book on this subject. Since its publication about 3,000 articles on corrosion of metals have been published. Many more and better experimental data on the subject are available with respect to both the influence and various factors and means of prevention.

In preparing this edition Doctor Speller has carefully reviewed each chapter. To keep the second edition within reasonable bounds the older sections in many cases have been condensed or omitted where better data are now available. Therefore, the first edition may still be used in conjunction with the new edition for reference.

The new book contains 694 pages, has a complete bibliography and in addition to a classified index carries an author's index. It is published by McGraw-Hill Book Co., New York City, and priced at $7.

Service Characteristics of Lubricating Oils

(Continued from Page 55)

fore or after distillation is effective in eliminating the unstable materials of low paraffinicity. In operation on residual stocks, a simple solvent extraction will accomplish some reduction in carbon-forming tendency by removal of the compounds of low paraffinicity, but this process does not remove those high-boiling components which are of high paraffinicity. By solvent extraction in the presence of propane, however, a much greater reduction in carbon residue is obtainable[11] through the tendency of the propane to reject the highest molecular-weight components. In fact, very low carbon residues may be obtained on residual stocks with the proper choice of selective solvents and propane ratio.

As another aspect of the effect of boiling range on the characteristics of lubricating oils, the relationship between boiling range and viscosity index is of interest. It is generally recognized that, for oils of a given viscosity and gravity, the wider the boiling range the better the viscosity index. On the basis of viscosity index alone, the obvious choice would be to produce a wide-boiling residual oil. In practice, however, it is found that this involves a sacrifice in flashpoint and in carbon-forming tendencies. Since the present investigation has shown that well-treated distillate oils are not deficient in lubricating value, the restriction of boiling range in order to reduce carbon formation appears well justified.

From the data presented it is seen that the service characteristics of a solvent-treated oil from which both the highest-boiling and the less paraffinic components have been completely removed are exceptionally good. The lubricating or wear-preventing value of such oil is unexcelled by that of any of the oils examined; the oil has high oxidation stability; and, in addition, the carbon-forming tendencies are such that a definite improvement in gasoline performance is obtained. The advantages in minimizing the rate of wear of the engine are self-evident. The high oxidation stability is reflected in service in low tendency towards sludge formation or viscosity change. As affecting gasoline performance, the low carbon-forming tendency of such oil permits the use of higher compression ratios with accompanying improved performance, without necessitating frequent carbon removal or the eventual use of higher-octane fuel.

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Among Gulf Coast Drilling Contractors

W. L. Hines, formerly Gulf Coast district superintendent of the Amerada Petroleum Corp., has severed his connection with this company and will enter the drilling contracting business. A new rig is now under construction in the shops of the Portable Rig Co. at Houston, and will be delivered shortly.

Al Buchanan, San Antonio, has a contract to drill for the Humble Oil & Refining Co. in the new Loma Novia Pool, east of the Government Wells Field in Duval County.

E. R. Thomas, San Antonio, is starting a well on his own property in the Loma Novia Field in Duval County.

O. W. Dyer, who makes headquarters in Victoria, Tex., is drilling a well in the Port Lavaca Field for Texas Co. Dyer is also drilling a well in the same field for the Empire Gas & Fuel Co.

W. Claud Smith is drilling a well for Texas Co. in the Port Lavaca Field.

Allied Drilling Co., San Antonio, is drilling a well for Texas Co. in the Port Lavaca Field.

Heyser Drilling Co., Dallas, is drilling a well for Texas Co. in the Port Lavaca Field.

Adrian Moore, Houston contractor and independent producer, is drilling a well on his own property in the Port Lavaca Field.

Carlisle & Williams, who were the second contractors on a wildcat well in Bandera County for the Plateau Oil Co., are moving their gasoline rig to Southwest Texas, and are being succeeded on the Bandera job by Milam Drilling Co., who are moving in a heavy steam rig. This well has been hard rock almost from the grass roots, and was originally started by the Gohlson Drilling Co., using a cable tool rig.

Smith & McDannald, having completed No. 3 Wortham for the Tide Water and Texas Seaboard oil companies in Cayuga, are waiting for a new location; are preparing to set 2,300 feet of 10-inch surface pipe in No. 2 Kidd in the Hastings Field, Brazoria County, for Stanolind Oil & Gas Co.; are moving in a rig to drill a well in East Texas for the Tide Water Oil Co.; have one rig drilling at Louise for the Pure Oil Co.; have four rigs running in the Bosco, Louisiana, Field, for Superior Oil Producing Co.; and are drilling below 8,300 feet on No. 1 Katzer for Shell Petroleum Corp. in the Roanoke Field, Louisiana.

C. & C. Drilling Co. is rigging up to drill No. 2 Watt in the Livingston Field for T. A. Carlton Oil Co. Same contractor is drilling below 5,000 feet on a deep test in the Dickinson Field, Galveston County, for Coast Petroleum Co.

Rutherford Drilling Co. is drilling below 5,800 feet on the third well in the Van Vleck Field for the Skelly Oil Co., and is preparing to finish a well in the Placedo Field for the Eastern Texas Petroleum Co.

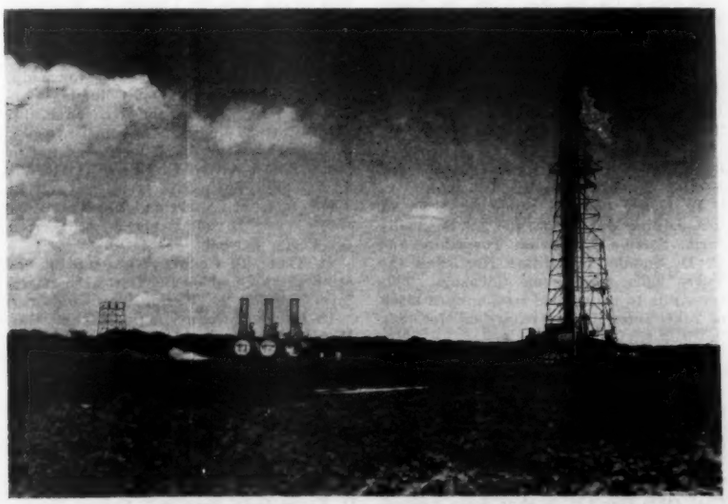
Jordan Drilling Co., having failed to pick up the shallow sand in No. 5 Trinity State Bank, Kittrell Pool, for Boone Brothers, is going down to the salt unless a commercial sand is found at a higher level. Salt in No. 1-D, 2,000 feet away, was found at 3,850 feet.

L. W. Capps is preparing to spud on a wildcat at Jennings, La., for H. M. Naylor; is waiting for word to go on a well for Crown Central Petroleum Co. in the Placedo Field; and is drilling below 6,200 feet on a wildcat test for Dick Schwab, 12 miles southwest of Orange.

Cron & Gracey have one rig running for the Shell Petroleum Corp. at Whitecastle, La.; one rig running for the same company at Roanoke, La.; three rigs running for the same company at Iowa, La.; has just completed a contract for Texas Co. at Port Lavaca; has one rig running in East Texas; has one rig running for the Repollo Oil Co. at Eunice, N. Mex., and has one rig running for Texas Co. at Manvel.

George Echols has cemented a short string of 5-inch pipe, after sidetracking through the 7-inch, on a workover job for J. Simmons in the Manvel Field. At Tomball, Echols is finishing a well for the Shell Petroleum Corp.; on Thompson ranch in Bee County, plugs have been drilled in the 7-inch pipe set at 5,990 feet for the Humble Oil & Refining Co.; in East Texas, he is drilling below 2,000 feet on a well for the Houston Oil Co.; at Manvel he is rigging up to drill a second well for Uscan Oil Co.; on Nash ranch, Brazoria County, he is rigging up to drill a well for Quintana Petroleum Co.; on the Brooks ranch, Jim Hogg County, he is drilling below 3,500 feet for the Sun Oil Co.

Bud Coyle has two rigs running in the Gillis Field, near Lake Charles, La., for Fohs Oil Co.



In the Port Lavaca Field, Calhoun County, many locations are in the middle of rich cotton fields. Here, one of W. Claud Smith's rigs is shown on location for Texas Co.

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Test in South Houston Proves to Be Producer; Possible Pools in Matagorda and Wharton

By F. L. SINGLETON
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., June 10.—The South Houston district, Harris County, a geophysical prospect being explored by Stanolind Oil & Gas Co. and which has held the attention of Gulf Coast operators for the past 10 weeks, was added to the list of producing fields at the close of the week, when the company's No. 1 fee was completed for a commercial producer.

After the well had made considerable salt water last week at a plugged-back depth of 4,825 feet, the operators plugged back to 4,685 feet and perforated the casing with 29 holes from 4,685-80 feet. After the preliminary setting had been made it was washed for three hours and when it did not show anything the swab was run, after which it made one head and started cleaning itself. The first 11 hours it flowed 68 bbls. of net oil through a twenty-sixty-fourths inch choke with tubing pressure 100 pounds and casing pressure 400 pounds. On the last 24-hour gauge available, it made 161 bbls. of net oil through a one-quarter inch choke on the tubing, with tubing pressure 765 pounds and casing pressure 1,000 pounds. Gravity of the oil is 26.8 at a temperature of 78 degrees, showing 2 per cent wash water, and is free of salt water.

Producing from Miocene

Production is coming from the Miocene sand, which is the first of its kind to be opened on the Gulf Coast for some time. The majority of the recent discoveries have been from various horizons at much deeper levels. The test was completed for an oiler after it had been plugged back three times. It was originally drilled to 5,069 feet in salt water sand, where the hole was found to be crooked, and was plugged back to 4,926 feet and redrilled to 5,020 feet without straightening the hole. After an electrical coring test had been made of the hole, the operators decided to test the well for production and plugged back again to 4,825 feet. Nine and five-eighths inch casing was cemented at 4,831 feet and when tested through perforated casing from 4,795-4,812 feet, it showed nothing but salt water. The hole was again plugged back to 4,685 feet and after the following screen setting was made and the casing perforated again from 4,665-80 feet, it was brought in for a producer: One foot 6 inches of back pressure valve on bottom of 21 feet 1 inch of 7-inch O.D., .010-gauge screen, 31 feet 7 inches of O.D. blank liner sealed with a 7-foot 6-inch packer and 2½-inch tubing swung at 4,677 feet.

The test is situated on a block of 4,200 acres approximately 13 miles southeast of the city of Houston in the H.T.&B. Survey No. 5 that was originally assembled by Johnston and Johnston and turned to the Stanolind Oil & Gas Co. after drilling operations had commenced. The South Houston Townsite includes approximately 4,000 town lots which have been divided into 85 drilling blocks of about 40 lots to the block. Four locations were recently made in the area by the company and these will no doubt receive immediate drilling.

The Stanolind Pipe Line Co. will start construction of a 6-inch line from the well, which will extend about 1½ miles due east, and will tie into the 12-inch main trunk line of the Pan-American Pipe Line Co. (a subsidiary company). The oil will be run to the Pan American Refining & Transport Co. at Texas City.

Matagorda and Wharton

While the above test was opening up another new field for the district, two other wildcat tests in Matagorda and Wharton Counties were making their appearance as possible pool openers. Due to mechanical trouble encountered in the wildcat test of H. M. Smith's No. 1 Wadsworth, located in the S. R. Fensler Survey, southern Matagorda County, the operators have been unable to make a satisfactory production test, but the well has made enough oil and shown considerable gas pressure the past week to indicate the discovery of a new pool. Bottomed at 8,418 feet and with 7-inch casing cemented at 8,376 feet, the operators perforated the casing with 40 holes from 8,153-8,178 feet, and after running 2½-inch tubing to 8,125 feet, the well was swabbed one time, and the hole bridged over just above the 8,100-foot sand. The tubing and screen was pulled and the following screen setting made, 91 feet of blank on bottom, 1 foot 9 inches of back pressure valve, 22 feet of 5-inch O.D. .008-gauge screen, 31 feet 5 inches of blank liner and 6 feet 9 inches of packer run in on the bottom of the 2½-inch tubing. It was then washed with water and made a good showing of live oil with some gas. More mechanical trouble was encountered and after pulling the tubing again, the operators were going back into the hole with the tubing to reset on top of the packer with a lead seal. The well is running over, making considerable fluid, and it is estimated the well is making from 5 to 10 bbls. per day.

The other prospective pool opener is Texas Co.'s No. 2 Pierce estate, located in the central part of the county in the I.&G.N. Survey No. 38. Sand was cored from 4,693-99 feet and on a 10-minute drill stem test from 4,680-99 feet it tested 550 pounds of pressure through a one-quarter inch choke on top and bottom and recovered 15 feet of drilling mud, with a trace of distillate. Another core was taken from 4,699-4,703 feet which was loose sand showing oil. Another core will probably be taken and casing cemented preparatory to testing. The company has a block of approximately 12,000 acres around the test and this is the second well to be drilled on the block within recent weeks. The first test, No. 1 Pierce estate, located to the northwest in Survey 38, was abandoned at a depth of 6,546 feet.

Montgomery County

In the extreme northern part of Montgomery County, the wildcat test of Charles B. Gohlson's No. 1 Aaron Parker in the J. Lindley Survey, which tested some oil and oil-cut mud a few weeks ago on a drill stem test from 3,711-3,769 feet, will probably be tested during the week. After standing a few weeks at 3,769 feet, the operators cemented 7-inch casing at 3,721 feet, after the hole had been deepened 4 feet to a depth of 3,773 feet. It is bottomed in the Cockfield sand toppd at 3,695 feet.

Dickinson

In the Dickinson Field, Galveston County, one deep well is being completed and two others are due to be tested during the week. Humble Oil & Refining Co.'s No. 1 Fugger, located 322 feet from the west line and 522 feet from the north line of the lease, in the J. S. Sherman Survey, is being swabbed in after it flowed through the drill stem through perforated casing from 8,073-75 feet. The test lasted 20 minutes and was made from 8,060-8,077 feet. The company's No. 2-A Stewart, in the John Sellers Survey, topped the oil sand at 7,975 feet and is bottomed in sand at 8,062 feet. The Discorbis was topped at 6,361 feet, Heterostegina at 6,816 feet and the Marginulina at 7,235 feet. The other test is the company's No. 1 Townes, an east offset to Pure Oil Co.'s No. 1 Shelor, a distillate producer. The oil sand was topped at 7,975 feet and the operators are reaming to cement casing. Total depth is 8,062 feet. The Discorbis was topped at 6,649, Heterostegina at 6,861 and the Marginulina at 7,158 feet.

Anahuac

The water level for the Anahuac Field in northern Chambers County was established by Humble Oil & Refining Co.'s No. 3 Middleton, which was cored to the total depth of 7,172 feet, where it tested 3,800 feet of salt water on a 15-minute drill stem test from 7,140-7,172 feet. The test was made through a three-eighths inch choke on top of the testing tool, and a one-quarter inch choke on bottom. After the test had established itself as the highest well in the field and indi-

Completions Fewer in Central West Field But Many Operations Are Under Way

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

FINDLAY, Ohio, June 17.—In the Lima Field of northwestern Ohio two completions were reported. Murphy and others' No. 3 on the R. and R. Criswell farm, Section 17, Tymochtee Township, Wyandot County, had an initial of 10 bbls. from the Trenton formation at 1,441 feet. Perkins & Co. has a rig for No. 1 on the Ephraim Bare farm, Section 21, same township. R. C. Jones is drilling No. 1 on the William Walter farm, Section 26, Ridge Township. Wood & Co. are still shut down close to 1,100 feet, and Cessna & Feasel are drilling No. 1 on the Thomas Bowman farm, Section 15, Pitt Township.

In Seneca County, Sandusky Gas Co.'s No. 1 on the George Doran farm, Section 3, Hopewell Township, was dry in the Trenton at 1,396 feet. Phillips and others' No. 2 on the James D. Watson farm, Section 1, same township, is under way.

In Hancock County, Brown and others are drilling on the J. E. Shoop farm, Section 26, Pleasants Township, and on the W. E. Geirhart farm, Section 23, Blanchard Township, both being in advance of production.

In Auglaize County, William C. Sowell is drilling No. 2 on the John F. Miller farm, Section 15, American Township, and has a rig for No. 1 on the Simon O. Cook farm, Section 11, same township.

In Hardin County, Walter Mier & Co. are drilling No. 2 on the Anna Sharf farm, Section 18, Pleasants Township. Bert Sheldon has a rig for No. 2 on the Ora E. Rush farm, Section 21, Blanchard Township.

In Darke County, E. C. Downey is drilling No. 1 on the Ruby Rhodes farm, Section 20, Mississinawa Township.

In Henry County, Stoddard & Darke are drilling No. 1 on the C. S. Shelly farm, Section 7, Marion Township, and P. D. Snonby is drilling No. 1 on the Curry heirs farm, same township. This county is to get a good testing on a block of 2,000 acres in the vicinity of McComb.

CENTRAL OHIO

In the Central Ohio Field, in Summitt County, Pawnee Corp.'s No. 1 on the Henry Harries farm, Section 2, Talmadge Township, is a gas well at 3,975 feet. Lyons and others' No. 2 on the A. H. Cummings farm, Section 6, Green Township, is shut down at 3,800 feet. East Ohio Gas Co. is shut down around 275 feet in No. 1 on the Rose Lamb farm, Section 6, same township. City Natural Gas Works' No. 1 on the Mertz & Moyer farm, Section 14, Pleasants Township, is drilling and same concern has a rig for No. 3 on the F. A. Ruff farm, Section 31, Rush Creek Township.

In Lorain County, Minor and others are drilling No. 3 Mathias Myers farm, Lot 32, Ridgeville Township. Ohio Fuel Gas Co. is drilling No. 1 A. S. Gibson farm, Lot 80, Columbia Township.

In Coshocton County, Preston Oil Co. has a rig for No. 4-1,580 on the C. D. Mossholder farm, in the Third-Quarter Section, and Pure Oil Co. is drilling No. 1 on the Thomas J. Clark farm, Section 3, Newcastle Township. Murphy and others are drilling No. 3 on the John S. Rine farm, Section 17, Perry Township, and C. C. Moore is drilling No. 2 on the J. Le Retilly farm, Section 20, Jefferson Township.

In Stark County, East Ohio Gas Co.'s No. 2 on the George Letherman farm, Section 11, Jackson Township, is a gas well at 4,406 feet. Same company's No. 1 on the T. and R. Scheetz farm, Section 3, is a gas well at 4,407 feet. In Perry Township, White and others are drilling No. 2 on the Jacob Isler farm, Section 25, Perry Township, and Lyons and others are drilling No. 1 on the Jacob F. Hess farm, Section 2, same township. Dewalt & Londen are shut down at 375 feet in No. 1 in the Charles C. Weirough farm, Section 7, Osnaburg Township. In Plain Township, East Ohio Gas Co. is drilling below 3,850 feet in No. 1 John C. Mayer farm, Section 16, same township.

In Tuscarawas County, Columbia Carbon Co.'s No. 1 on the Urbano Zodro farm, Lots 36 and 43, Goshen Township, is a gas well at 4,927 feet. James Upham's No. 1 Alfred C. Uhlers farm, Lot 4, Fairfield Township, is a gas well at 4,818 feet. Mike Hardwick's No. 2 on the Larson B. Zimmerly farm, Section 21, Perry Township, is drilling.

In Trumbull County, Kime and others are drilling No. 1 on the Lawrence Booth farm, Section 24, Vienna Township.

In Fairfield County, City Natural Gas Works' No. 3 on the F. A. Ruff farm, Section 31, Rush Creek Township, is a gas well at 2,602 feet. Same company has a rig for No. 1 on the Thomas Kelley farm, Section 31, Rush Creek Township, and has a rig for No. 1 on the George Messbarger farm, same section.

In Delaware County, Chester Wise is drilling below 3,032 feet in No. 1 Herman D. Vance farm, Section 3, Orange Township.

In Lawrence County, Shale Develop-

(Continued on Next Page)

cated the structure of the field to extend in a northeasterly direction from the discovery well, it was purposely drilled deeper to establish the water level, which was found to be at 7,130 feet. In making the test of the water level, a total of 200 feet of oil sand was encountered. The test has been plugged back to 7,100 feet, and 7-inch casing was cemented at 7,076 feet.

One mile northeast of the above test in Section 50, in the J. A. Beckwith Survey, Humble Oil & Refining Co. and Rycade Oil Co. have announced location for their No. 1 Iola White, located 466 feet out of the southwest corner of the section. It is on the 240-acre lease purchased last week by Humble Oil & Refining Co. from the Rycade Oil Co. for a reported consideration of $240,000 cash, with the company agreeing to drill six free wells, and after they have been drilled, the company will continue to drill six additional wells, which will be paid out of a one-fourth of the oil produced.

Colorado County

Colorado County received its first activity in some time, by the announcement of two wildcat locations. In the Garwood gas area, southern part of the county, Coyle and Concord staked its No. 1 fee, 550 feet from the north line and 1,950 feet from the east line of Section 45, in the I.&G.N. Survey. In the Bernardo area, Clyde Creighton and others made location for No. 1 Witte, 150 feet from south and east line of the most westerly northwest corner of the A. White Survey.

Mykawa

Two more producers are due to be added to the Mykawa Field, Harris County, which has recently been the scene of much activity. Sterling Oil & Refining Co. has apparently a producer in the making at its No. 1 B. H. Williams in the William Lovett Survey. Saturated sand was topped at 4,339 feet, and it is bottomed in oil sand at 4,416 feet with 7-inch casing cemented at the top of the sand. In the F. J. Rothas Survey, West Production Co.'s No. 1 J. E. Lobit is bottomed in sand showing oil at 4,542 feet and has cemented 7-inch casing at 4,410 feet. The top of the sand was reported to have been topped at 4,413 feet.

Matagorda County has witnessed considerable leasing activity within the past few weeks and some interesting tests are due to be drilled in the county at an early date. In the Sargent area, G. W. Fabriqueze is reported to have leased the Bair estate of approximately 10,000 acres for Sterling Oil & Refining Co., which is due to start drilling operations by August 15. In the Lake Austin area, Frank Campbell is reported to have taken a block of approximately 12,000 acres centering in the S. F. Austin and I.&G.N. Survey, Block 1, which is west of Lake Austin. Continental Oil Co.'s No. 1 Feife, in the J. S. Criswell Survey, made a drill stem test from 4,960-67 feet with the packer at 4,960 feet, and showed 1½ joints of mud and sand with a slight taste of oil and salt water. On last reports it was drilling ahead below 4,995 feet.

Liberty County

In the west central part of Liberty County, J. W. Frazier's No. 2 Lynott and Buffum, in the southeast part of the James Robeson Survey, is drilling in shale below 6,301 feet. Based on top of the Heterostegina, reported topped at 3,919 feet, it is more than 100 feet lower than the same operators' No. 1 Lynott and Buffum, a dry hole located west of the test in the same survey.

Robertson County

H. L. Patton's No. 1 H. Ely, a wildcat test in Robertson County, is drilling in shale below 3,096 feet. With and elevation of 397 feet it topped the Midway at 2,866 feet, and is reported to be running more than 300 feet higher than Steen Drilling Co.'s No. 1 Sackville, an abandoned test 18 miles to the northeast which encountered the same formation at 3,209 feet, with an elevation of 287 feet. The test is scheduled to be drilled to the Navarro, but it if continues to run high and no production is developed in this formation it will no doubt be carried much deeper.

Hastings

Two more producers were added to the Hastings Field, in northeastern Brazoria County, bringing the total number of wells completed to six, all of which have been completed by Stanolind Oil & Gas Co. The company's No. 1 Sneed, west of the company's No. 1 Steve Paul in the south part of the field, was completed at 6,102 feet for an initial production of 147 bbls. per day through a one-eighth inch choke, with tubing pressure 825 pounds and casing pressure 700 pounds. Due north, No. 2 J. W. Surface was completed at 6,100 feet for an initial production of 155 bbls. per day through a one-eighth inch choke with tubing pressure 800 pounds and casing pressure 650 pounds.

COASTAL LOUISIANA

In Jefferson Davis Parish, Louisiana, Howard N. Naylor and John La Costa have made location for an interesting wildcat test on a 1,145-acre tract out of the west corner of Section 39-10s-3w. This makes the ninth active wildcat test for coastal Louisiana.

O'Brien Brothers and others are doing considerable leasing in Livingston and East Baton Rouge Parishes. The majority of the leasing centers around the southeast corner of Township 5s-2e, and they are reported to have assembled approximately 4,000 acres, paying from 25 cents to $2 per acre. This is an old area, formerly leased by the Adams Royalty Co. about a year ago, and leased to the Tide Water Oil Co., which turned the leases back to the company after the area had been worked with reflection seismograph.

In the northwest part of the Bosco Field, Acadia and St. Landry Parishes, Superior Oil Producing Co.'s No. 2 E. Mire was completed at a total depth of 8,655 feet for an initial production of 518 bbls. in 24 hours through a nine-sixty-fourths inch choke, with tubing pressure 1,450 pounds and casing pressure 1,900 pounds. Three other tests drilled by the company have reached the sand and will be tested this week. No. 8 Hernandez, within the proven limits of the field in Section 34, is bottomed at 8,621 feet and is reaming to set casing. In the same section, No. 3 Johnson is bottomed in oil sand at 8,688 feet, with 7-inch casing cemented at 8,673 feet. No. 5 Hernandez, is waiting on cement to set at a total depth of 7,845 feet. Seven-inch casing was cemented at 7,835 feet.

Shell Petroleum Corp.'s No. 1 Jarnigan, a deep test in the Roanoke Field, Jefferson Davis Parish, is being watched closely as it cores for the 10,000-foot sand that blew the drill stem up the hole causing it to stick several weeks ago. The operators were unable to recover and the test was plugged back, sidetracked and started redrilling for the sand. Late in the week it was coring below 9,980 feet. Location is in Section 12-9s-4w.

Texas Co. was scheduled to test its No. 3 Nickerson in the Gillis Field, Calcasieu Parish. Oil sand was cored from 6,732-46 feet and 6⅝-inch casing was cemented at 6,734 feet. Location is in Section 12-9s-8w.

Wildcat Operations on Gulf Coast

Week Ending June 15

RACCOON BEND—AUSTIN COUNTY

Humble O. & R. Co.'s No. 17-X Thompson, 933 ft. SE from No. 13-X Thompson, 466 ft. SW from NE line.
Drlg. shale 839 ft.

Humble O. & R. Co.'s No. 7-X Helmuth, 2,348 ft. along NE line, 150 ft. at R/A from lease line.
Drlg. shale 3,830 ft.

Humble O. & R. Co.'s No. 8 Bellville, 190 ft. from N cor., 610 ft. E from No. 7.
T.D. 4,120 ft.; 7-in. csg. 3,992 ft.; I.P. 31 bbls. in 24 hrs.; T.P. 310 lbs.; C.P. 520 lbs.

ALLEN DOME—BRAZORIA COUNTY

Mills Bennett Prod. Co.'s No. 4 Rose Allen, 320 ft. SE of No. 1, 300 ft. E of No. 4 Owens, J. G. Mendal Sur.
Drlg. shale 5,280 ft.

DAMON MOUND—BRAZORIA COUNTY

Intercoastal Oil Co.'s No. 13 Wisdom, 150 ft. from NW line and 10 ft. from SW line of Lot "D", Blk. No. 51.
S.D. 2,600 ft.

HASTINGS—BRAZORIA COUNTY

Humble O. & R. Co.'s No. 1 E. Lively, 330 ft. from the N line, and in the center of E and W lines of Lot 13, A.C.H.&B. Sur.
Building derrick.

Humble O. & R. Co.'s No. 1 J. F. Bridges, center of N 10 acres of 20-ac. lease, A. C.H.&B. Sur. No. 2.
Location.

Humble O. & R. Co.'s No. 2 J. F. Bridges, center of S 10 acres of 20-ac. lease, A. C.H.&B. Sur. No. 2.
Location.

Humble O. & R. Co.'s No. 1 J. C. Johnson, center of 10-ac. lease, A.C.H.&B. Sur. No. 2.
Location.

Stanolind O. & G. Co.'s No. 2 Turner, 285 ft. N, 2,876 ft. W of SE cor. of 195-ac. tract, A.C.H.&B. Sur. No. 1.
Location.

Stanolind O. & G. Co.'s No. 1 Kidd, 285 ft. S of N line, 455 ft. E of W line of 58.4-ac. lease, A.C.H.&B. Sur. No. 2.
Drlg. shale 1,542 ft.

Stanolind O. & G. Co.'s No. 1 J. C. Hutchinson, 330 ft. S, 330 ft. E of the NW cor. of a 40-ac. tract in the A.C.H.&B. Sur. No. 36.
Drlg. shale 2,830 ft.

Stanolind O. & G. Co.'s No. 3 Sneed, 466 ft. at R/A from W line and 466 ft. at R/A from the N line of a 225-ac. tract, A.C. H.&B. Sur. No. 2.
Drlg. shale 2,857 ft.

Stanolind O. & G. Co.'s No. 1 B. L. Turner, 695 ft. N of S line, 2,550 ft. E of W line of survey.
Drlg. shale 5,631 ft.

Stanolind O. & G. Co.'s No. 1 Ford, 330 ft. N of S line of 199.37-ac. tract and 1,725 ft. E of W line of A.C.H.&B. Sur. No. 1.
Drlg. shale 3,164 ft.

Stanolind O. & G. Co.'s No. 1 Williams, 466 ft. N, 1,126 ft. from most easterly SW cor. of 81.3-ac. lease, A.C.H.&B. Sur. No. 1.
T.D. 5,219 ft.; fishing 3,798 ft.

Stanolind O. & G. Co.'s No. 1 Grote, 460 ft. N and W of SE cor. of 71-ac. lease, A.C. H.&B. Sur.
7-in. csg. 5,862 ft.; T.D. 6,100 ft.

Stanolind O. & G. Co.'s No. 2 Sneed, 491.5 ft. E, and 1,590 ft. S from NW cor. of Gilbert Sneed 225-ac. lease, A.C.H.&B. Sur. No. 2.
T.D. 6,102 ft.; 7-in. csg. 5,843 ft.; I.P. 147 bbls. per day through ⅛-in. choke; T.P. 825 lbs.; C.P. 700 lbs.

Stanolind O. & G. Co.'s No. 2, J. W. Surface, 375 ft. S and 466 ft. W from easterly NE cor. of 75.9-ac. lease, A.C.H.&B. Sur. No. 2.
T.D. 6,100 ft.; 7-in. csg. 6,005 ft.; I.P. 155 bbls. per day through ⅛-in. choke; T.P. 800 lbs.; C.P. 650 lbs.

MANVEL—BRAZORIA COUNTY

Burton Drlg. Co.'s No. 1 Beddoe, 150 ft. from S line, 290 ft. E of W line, Lot 29, H.&T.R. Sur. No. 23.
T.D. 3,986 ft.; 7-in. csg. 3,964 ft.; I.P. 20 bbls. per hr. through ⅛-in. choke; T.P. 200 lbs.

T. J. Holcombe's No. 1 A. F. Beddo, 220 ft. from E line, 248 ft. from S line of Blk. 29, H.T.&B. Sur.
Moving in rig.

Jay Simmons' No. 1 Stitt, located in center of W 5 acres of Lot No. 28, H.T.&B. Sur. No. 23.
T.D. 4,008 ft.; 7-in. csg. 3,990 ft.; tested S.W.; P.B. to 3,650 ft.; well blew out; killed; reaming to bottom at 3,990 ft.

J. W. Sorrells' No. 1 Swift, Blk. 21, Abst. 318, H. N. Little Sur.
Derrick.

Texas Co.'s No. 3 Boff, 50 ft. W, 50 ft. S of NE cor. of Lot No. 24, Charles O'Donnell Sur.
Derrick.

Texas Co.'s No. 2 A.R.G.H. Co., 220 ft. E and 247 ft. N of SW cor. of Lot 38, H.T. &B. Sur.
Drlg. sand and shale 1,784 ft.

Texas Co.'s No. 8 Ewing, 770 ft. S, 41 deg., 40 ft. W and 648 ft. N, 47 deg., 59 ft. from E cor. of lease, H. N. Little Sur.
10-in. csg. 1,149 ft.; drlg. gumbo 1,150 ft.

Texas Co.'s No. 4 F. Leider, 150 ft. S, 42 deg. W from the lease line and 150 ft. S, 48 deg. E from NW line of Lot 3, H. N. Little Sur.
Rig up.

Texas Co.'s No. 14-B Belcher, 660 ft. S 42 deg. W from No. 9-B Belcher, H. N. Little Sur.
T.D. 5,158 ft.; 7-in. csg. 5,120 ft.

Texas Co.'s No. 1 O. W. Halligan, center of Lot 27, H.T.&B. Sur. No. 23.
Location.

Texas Co.'s No. 1 O. W. Halligan, center of Lot 26, H.T.&B. Sur. No. 23.
Location.

Texas Co.'s No. 17 Houston Oil Fields Assn., 244 ft. S, 244 ft. W from NE cor. of Lot 1, A.C.H.&B. Sur. No. 91.
T.D. 3,992 ft.; 7-in. csg. 3,974 ft.; swbd. dry; no fluid or gas.

Texas Co.'s No. 16 Houston Oil Fields Assn., 247 ft. S, 440 ft. E from NW cor. of Lot 19, A.C.H.&B. Sur. No. 91.
Drlg. clay and boulders 728 ft.

Texas Co.'s No. 2 Dawson, 247 ft. S, 241 ft.

(Continued on Page 89)

Central West Fields

(Continued from Preceding Page)

ment Co. has a rig on the W. P. Booth farm, Section 21, Union Township. C. C. Wolfe & Co. is drilling No. 1 Edward Miller farm, Section 28, Rome Township, and Frick and others are drilling No. 1 on the Murdock farm, Section 33, same township. R. Staub is drilling No. 1 on the Caughlin Hunt farm, Section 35, Windsor Township.

In Scioto County, Bachelor and DeWitt are drilling No. 1 on the J. B. Shilling farm, Section 32, Madison Township. In Carroll County, Lisbon and others are drilling No. 4 on the J. N. Hanna farm, in London Township.

In Gallia County, Ohio Fuel Gas Co. is drilling No. 1 on the S. R. Bing farm, Section 22, Addison Township. H. E. Hamilton & Co. is drilling No. 1 Ella Jones farm, Section 31, same township. Bowers and others are drilling on the Ella M. Donally farm, Section 34, and Penn-Ohio Gas Co. is drilling No. 1 on the Cyrus Swisher farm, Section 25, same township.

In Crawford County, Bryan Crum is drilling on the Bryan Crum farm, Section 34, Auburn Township.

In Ashland County, Hulse & Kundtz are drilling No. 1 Clarence Frankfelder farm, Section 16, Montgomery Township. Hulse & Tedlow are starting a test on the William F. Kandis farm, Section 11, Jackson Township. Ohio Fuel Gas Co. is drilling No. 3 on the A. J. Stoner farm, Section 3, same township. Same company is drilling No. 1 on the Clare Osborn farm, Section 3, Perry Township.

In Wayne County, Clinton Township, Robison & Co. are drilling No. 1 Raymond Lake farm, Section 12, Clinton Township. John Harpster is shut down around 425 feet on the E. F. Beichler farm, Section 6, Chippewa Township.

KENTUCKY

Four completions were reported from the Kentucky Field, two producers and two dry. Stewart & Gealy's No. 8 on the James Roberts farm, in the Oak Pool, Ohio County, had an initial of 80 bbls. B. E. Calvert and others' No. 5 on the J. and Edward Smith farm, had an initial of 50 bbls. Inland Oil & Gas Co.'s No. 1 on the William Evans farm, was dry, as was S. R. Sirmans' No. 4 on the Cooper-Mosely farm, all in Ohio County.

INDIANA

In Spencer County, Big Four Oil & Gas Co.'s No. 1 on the Jesse Zuelly farm, NE SE Section 8, Huff Township, produced an initial of 3 bbls. Charles Zoecher's No. 1 on the William Grass, Jr., farm, was dry. In Ohio Township, Staves Drilling Co. is drilling No. 2 on the Raymond Bretz farm, SW SW Section 34.

In Perry County, N. N. Smith's No. 1 on the Nance Hawhee farm, SW Section 10, Troy Township, was dry at 750 feet. Huff & French are drilling No. 1 on the Peckenpaugh farm, same township. In Clark Township, same county, Anderson Creek Oil Co. is drilling No. 8 on the Alvin Franchville farm, NE NW Section 30, and Gardner Oil Co.'s No. 1 on the W. F. Lanman farm, NE NE Section 27, same township.

In Daviess County, Harry Hanson & Co.'s No. 1 on the T. B. Reinsel & Co.'s was dry at 776 feet, in the SW SE Section 22, Harrison Township. In Veale Township, Wallace Oil Co.'s No. 1 on the O. B. Wallace farm, NW SW Section 21, produced an initial of 40 bbls.

In Washington County, Charles E. Wyman's No. 1 on the Offa Chastain farm, NE SE Section 12, Vernon Township, is a gas well. In Warrick County, James W. Havens' No. 1 on the Louis Sussott farm, SW NW Section 28, Greer Township, was dry in the Barker sand. In Dubois County, E. L. Damron is drilling No. 1 on the Joe Schroering farm, SE SE Section 26, Marion Township.

In Dearborn County, Dearborn Development Co. is drilling No. 1 on the Joseph Hornback farm, NW SE Section 11, York Township.

Fewer Completions But Undiminished Activity Is Reported From the Lower Eastern Fields

By STAFF CORRESPONDENT

PITTSBURGH, Pa., June 17.—Few completions were recorded in the lower eastern fields during the week but activity has not diminished. Completions consisted of three gas wells and six producers with an initial daily production of 14 bbls. In addition, there were five dry holes.

SOUTHEAST OHIO

There were no large wells completed in Southeast Ohio and only three producers. In Jefferson County, McBride Oil Co. completed a second test on the Oella C. Priest farm, NW Section 30, Saline Township. It was drilled in the Berea sand at a depth of 810 feet and is producing a half barrel a day, natural.

In Medina County, there were two producers and one dry hole. In Chatham Township, Tract 1, Lot 3, E. R. Edson & Son Co. completed No. 29 on the W. H. Wideman farm in the Berea grit at 525 feet which produced 4 bbls. the first day after shot. In Lot 55 of this township, Hubert J. Allis completed No. 4 on the Charles and Westa Allis farm in the Berea grit, depth 554 feet, and it made 3 bbls. the first day after shot. In the same township, Tract 13, Lots 2 and 3, Oko Oil & Gas Co. drilled No. 68 on the Henry Essig farm through the Berea grit to a depth of 415 feet. It was dry.

In Noble County, L. V. Hesson and others drilled No. 9 on the C. M. Harper farm, NE Section 6, Enoch Township, through the Buel Run sand to 312 feet. There was no showing of oil or gas. It is almost due west of No. 1.

In Perry County there were two gas wells. In NE Section 8, Reading Township, Ohio Fuel Gas Co. completed a test on the Albert Smith farm in the Clinton sand at a depth of 3,000 feet. It is a gas well gauging 300,000 feet a day. In this township and NW Section 16, Hopewell Fuel & Gas Co. completed a test on the L. V. Kuffman farm in the Clinton sand at 2,980 feet. It gauges about 200,000 feet of gas a day.

In Washington County, H. W. Lankford and others drilled a test on the George Gerkin farm on Whipple Run, Lot 167, Fearing Township, through the Second Cow Run sand to 912 feet. It was dry.

SOUTHWEST PENNSYLVANIA

No wells were completed in Southwest Pennsylvania and there was one dry hole. In Greene County, Carnegie Natural Gas Co. finished deepening No. 2 on the Hester Stephenson farm in Cumberland Township at a total depth of 3,049 feet. The Elizabeth sand was at 3,030-34 feet with only 17,000 feet which after shot increased but slightly. The hole is being plugged.

In Amwell Township, Carnegie Natural Gas Co. has reached 1,150 feet in deepening the test on the R. M. Carrons No. 2 farm. The Little Dunkard sand was at 1,097 feet with about 200,000 feet of gas showing in the formation. F. K. Fawcett and others are drilling at 1,790 feet on the Tucker heirs farm. Raymond Orrill and others have reached 1,700 feet in No. 5 on the G. L. Walker farm. On the R. A. Rankin farm Manufacturers Light & Heat Co. has rigged up for No. 2.

In East Findley Township, Washington County, Pitroi Fuel Co. is drilling at 1,800 feet on the Harvey F. Taylor farm. The Big Injun sand was at 1,785 feet with a showing of gas and water at 1,875 feet. The Natural Gas Co. of West Virginia is down 1,175 feet on the Wright Ealy farm, a test.

In Cecil Township, Washington County, J. L. Morris and others have a rig on the J. A. Augerer farm, 2,000 feet west of the producer on the Thomas Weaver farm.. W. A. Lindsay has rigged up on the S. L. Van Eman farm. In North Strabane Township, F. D. Freeland and others are drilling at 975 feet on the T. F. Clark farm. In Amwell Township, Carnegie Natural Gas Co. is cleaning out to drill deeper No. 1 on the T. M. Shrontz farm. In Deemston Borough, Washington County, Equitable Gas Co. is plugging No. 1 on the James H. Crawford farm.

In Greene County, Wasmuth and Callahan have started drilling No. 3 on the Daniel Goodwin farm in Richhill Township, 1 mile north of Ryerson Station. In this township, Lewis & Co. will probably skid the rig to a new location on the Samuel Chess farm.

In Jackson Township, Greene County, H. E. Milliken and others are drilling at 3,210 feet deepening No. 1 on the S. B. Smith farm. In Gilmore Township, Johnson & Eddy plugged the second test on the W. L. B. Roberts farm after it failed of being a commercial gasser.

In Center Township, Greene County, Carnegie Natural Gas Co. has started drilling on the J. H. Orndoff farm. In Washington Township, Equitable Gas Co. drilled deeper No. 1 on the T. J. Huffman farm from 2,805 to 2,835 feet in the Fifty-foot sand. The bottom of the sand was at 2,834 feet, the Pittsburgh Coal being 842 feet, and since the gas did not improve the hole is being plugged.

WEST VIRGINIA

No deep tests drilling in West Virginia reached their horizons during the week. In Jefferson district, Kanawha County, the test of Benedum & Trees on the Joseph Hill farm and reported dry through the Oriskany last week, will be drilled to the Newburg sand. It is 4,871 feet deep and drilling. The Oriskany sand was placed at 4,791 to 4,805 feet.

The next deepest test is that of Yoak Oil & Gas Co. on the W. T. and J. H. Goshorn farm, which is drilling at 4,660 feet and should reach the Corniferous lime this week. This is in Elk district. In this district, Benedum & Trees are shut down cementing a cave at 4,446 feet on the Mary C. Wingfield farm. Columbian Carbon Co. reached 1,329 feet on the G. and D. Copenhaver farm in this district and shut down for gas.

In Malden district, this company is down 975 feet on the W. D. Lewis farm. Godfrey L. Cabot, Inc., is drilling at 1,220 feet on the Plus R. Levi farm. In Loudin district, this operator has reached 4,256 feet on the Edgewood Realty Co. lease and has started drilling the scheduled deep test on the Kanawha Land Co. lease. Columbian Carbon Co. is rigging up on the Kanawha City Co. lease.

Producers

There were only four completions and one dry hole in West Virginia. In Pleasants County, J. M. Smith and others completed a test on the William Moreland farm on Goff Run of Bull Creek in Jefferson district in the Berea sand. It will make a 1-bbl. pumper.

In Ritchie County, H. N. Rinehart completed No. 7 on the J. B. Markey farm in Grant district in the Maxon sand at a depth of 1,735 feet. It is a 3-bbl. pumper. In Clay district, Lost Run Pool, Richards Farm Oil Co. completed No. 7 on the Corlie Ball farm in the Injun sand. There was a showing of about 30,000 feet of gas a day at 1,818 feet and 2 bbls. of oil a day at 1,826 feet.

Gas Wells

In Kanawha County, Falling Rock Cannel Coal Co. completed No. 109 on the J. B. Weir farm on Falling Rock Creek in Big Sandy district. It was drilled in the Weir sand at 1,725 feet and is showing for 500,000 feet a day. It is 1,800 feet northeast of Virginian Gasoline & Oil Co.'s test on the Brown heirs farm.

In Calhoun County, in gas territory, C. B. Lewis and others drilled a second test on the Michael J. Kight farm in Sherman district through the Injun sand to 2,029 feet. It was dry.

Drilling in West Virginia

In Boone County, Pure Oil Co. is building a rig for No. 74 on the Federal Coal Co. tract in Sherman district. Its No. 73 on this lease is drilling at 2,487 feet. In this district, Owens Illinois Glass Co. is down 2,220 feet on the Peytonia Land Co. lease, No. 20. In Washington district, Pond Fork Oil & Gas Co. is spudding No. 21 on the Cole and Crane lease. O. B. Cunningham and others have made a location on the Dollie Workman farm.

In Cabell County, Merritts Creek Gas Co. is spudding on the Charles Everetts farm in Guyandotte district. In McComas district, West Virginia Gas Co. has made a location on the George W. Savage farm. R. H. Adkins and others have started drilling No. 3 on the H. S. Fraley farm. Monickle Gas Co. is down 1,200 feet on the T. C. Bledsoe farm, a test. R. H. Adkins, trustee, is drilling in the Brown shale on the Benjamin Bledsoe farm. Boyles and Gardner are drilling at 3,237 feet, the Brown shale, on the Edward Owens farm.

In Calhoun County, Morley Oil & Gas Co. has made a location on the George McKee farm in Lee district. In this district, Southeastern Gas Co. is down 1,927 feet on the Amos Smith farm, a test, and Everett Starcher and others have reached 1,450 feet on the C. C. Starcher farm. In Sherman district, Starcher and Richards are drilling at 700 feet on the Albert Kight 52-acre farm and hold a location on the same 26-acre tract. In Washington district, J. J. Massey is down 1,300 feet on the E. P. Cottrill No. 2. Earl Knotts has a rig standing on the H. H. Bennington farm, a test.

In Clay County, F. F. McIntosh is drilling up the bailer at 1,940 feet in the second test on the Peabody Coal Co. lease in Pleasants district. In Doddridge County, L. L. Shinn is drilling on the J. R. Hiley farm in Central district.

In Gilmer County, A. E. Ellis and others are rigging up on the C. C. Pickens farm in DeKalb district. J. W. Cunningham and others are rigging up on the Lee and Ola Gainer farm, a test. McCall Drilling Co. is rigging up a second test on the G. W. Wigner farm. In Center district, Grant Fowler and others have completed rig on Nora V. Roberts farm. Starcher and Richards have a rig standing on the R. Paul Ritchie farm. Hope Construction & Refining Co. is preparing location on the K. C. Simmons farm.

In Kanawha County, Godfrey L. Cabot, Inc., is building a rig for No. 49 on the Arabella D. Huntington estate in Cabin Creek district. In Malden district Owens Illinois Glass Co. has reached the sand in No. 10 on the C. Q. Crockett farm and is shut down testing.

In Lincoln County, United Fuel Gas Co. is building a road to a location for No. 4,555 on the Vincent Dailey farm in Carroll district. In Union district, Pauley and Pridemore are down 750 feet on the Minnie Adkins farm. In Sheridan district, H. A. Waggoner, trustee, is rigging up on the Nettie May farm. The Kanawha Gas & Utilities Co. is down 1,300 feet on the R. R. Sloan farm.

In Logan County, Southeastern Gas Co. has made a location on the G. W. Mitchell farm in Logan district. Boone County Coal Co. is drilling at 350 feet in No. 3 on the Boone County Coal property. Both tests are trying to follow up the good gas wells over the line in Washington district, Boone County.

In Marion County, Owens Illinois Glass Co. is drilling at 1,893 feet on the A. T. Heck farm in Paw Paw district. In Marshall County, Cameron Light & Heat Co. is down 1,100 feet in No. 2 on the W. R. Hughes farm in Cameron district. The Coal was at 896 feet.

In Pleasants County, M. C. Martin is drilling down No. 1 on the Pauline Bennett farm in Jefferson district at 1,300 feet. In Putnam County, W. J. Petterman has a location for No. 3 on the R. L. Morris farm in Scott district.

Raleigh County

In Raleigh County, Godfrey L. Cabot, Inc., has started drilling No. 8 on the Beaver Coal Co. lease in Slab Fork district. This operator is still testing the gas in No. 6 at 3,516 feet, the Big Lime.

In Ritchie County, L. P. Bickel has made a location on the P. W. Morris farm in Murphy district. George Egan has a location on the B. F. Welch farm, same district. W. H. Bickel is down 1,860 feet in No. 5 on the U. S. Fluharty farm. W. H. Mosser is drilling at 1,565 feet on the G. L. Goff farm. Shannon Dawson is down 1,350 feet on the E. C. Dawson farm. In Grant district, Beech Oil Co. has started drilling No. 2 on the D. C. Newbrough farm. In Union district, W. A. Bickerstaff is drilling at 600 feet on the Lakin Prichard farm, a test. In Clay district, Mahone and others are rigged up on the Thomas Murray farm.

In Roane County, Clyde W. Campbell has the material on the L. D. Gandee farm in Curtis district. In this district, H. S. Adams and others are down 735 feet on the G. B. Norman and others lease. H. H. Staats and others shut down for water on the R. R. Petty farm. K. M. Hunt and others are drilling at 1,550 feet in No. 2 on the Lizzie Moore heirs farm. Reedy Oil & Gas Co. is down 1,540 feet on the L. M. Riddle farm, No. 7. McIntosh and Norman have the material for a second test on their own property. In Smithfield district, Orchard Run Oil & Gas Co. is drilling No. 2 on the Anna Brannon farm at 350 feet. Big Four Drilling Co. is fishing the tools on the Mary E. Hershberger test at 500 feet. Guy Boggess is down 900 feet on the Anderson Boggs farm.

In Wood County, L. P. Bickel has a rig standing on the Manuel Hendershot farm on Worthington Creek in Union district. In Williams district, D. E. McClure is drilling at 1,000 feet on his own property.

R. H. HUNT DIES

LOS ANGELES, Calif., June 17.—Richard H. Hunt, 75, one-time manager of the old Standard Oil Co. in China, died here Wednesday. He was with the Standard Oil Co. for 40 years.

Warning by California Umpire and Committee Fails to Check Crude Oil Price Concessions

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., June 17.—Despite the warning of Umpire Pemberton and the Central Proration Committee that disposal of crude oil below posted prices would result in economic suicide, several California operators are feeding out crude indiscriminately. In one area 30 gravity oil is being sold at 82 cents per barrel instead of at the posted price of $1, and in another field some oil is being sold at 16 cents per barrel below regular listings. Independent refiners buying this oil claim they cannot operate on the higher schedule and have accordingly quoted the lower figure for any and all oil offered irrespective of whether it was produced under curtailment or not. This practice has not become general but if it is extended will lead to serious consequences.

Chiselers are not fooling anyone because the umpire and the larger companies know just about how much hot oil is going out of each field. There is a growing sentiment to throw open the southeastern end of the Playa Del Rey Field, because every indication points to the possibility that if these wells were opened wide there would not be much left at the end of 30 days. Executives of the major companies and many geologists familiar with the district have been bending every effort to open every well because they feel that within 30 days the Playa Del Rey Field will be a thing of the past. Those familiar with the district feel that the gas head would be removed in less than a month.

Wells in the Playa Del Rey Field, in the opinion of many, have been given fictitious potentials because of the manner in which the tests are conducted. They claim that it is impossible to establish a normal potential when only one well is allowed to produce at a time. Playa Del Rey is given a daily potential of 57,960 bbls. under the latest set-up. This is too high because the field cannot make this amount of oil and we might just as well face the fact now as later. It is quite doubtful whether the field with all wells opened up simultaneously could equal this figure for more than a short time.

Outlook Promising

It is unfortunate that a gasoline price war has broken out in southern California at a time when every known factor indicated an upward trend. There is really no new field in the ascendancy at the present time and for this reason there is no adequate reason to prolong existing uneconomic competitive marketing conditions.

The existing gasoline price war, however, will have a tendency to prevent improvement until some time later and so operators will sit tight pending developments.

Committee Meeting

The committee, consisting of C. M. Rood, A. J. Crites, Laurence Kelly, A. D. Mitchell, Clifford Lord, Neal Anderson and Umpire Pemberton, which was appointed at the general meeting held in Los Angeles last week to make a study of the situation has been in daily consultation almost all week.

The recommendations of this committee are of primary importance provided that operators follow them out to the letter. The committee of operators appointed a week ago "is convinced that it is fundamental that the crude oil price structure depends upon the maintenance of a proper relation between the supply and demand for crude oil, and that to secure such a proper relation it is essential that an acceptable program of curtailment be maintained for a period of at least one year. The present plan is approved by your curtailment committee as a de facto program until such time as it may be changed in an orderly manner. The pending recognition and ratification of an acceptable program for curtailment of crude oil allowable production is essential in order that operators be very cautious in the disposal of their crude oil. It is deemed by the committee to be particularly important that operators refuse to dispose of their crude oil at less than the current posted price, or, in other words, it is essential that operators do not proceed to a program of cutting the price on their own crude oil.

Outlets Available

"There should be no difficulty in disposing of crude oil produced under the existing schedule, and no delay resulting therefrom need continue longer than necessary to contact through your usual channels those who are in the market to pay the posted price. There may be a delay of 48 hours in locating the available market, but if the oil is curtailed and the State approximates its allowable, you need anticipate no difficulty. Do not listen to insidious propaganda designed to induce you to break the market by overproducing. You will bring disaster upon yourselves if you deliberately sell below the posted price. This is a time for sanity and steadiness. The price is now posted and you need not accept a lower price unless you yourselves weaken. By steadiness and patience you have gained ground and the urgent necessity of others should be subjected to the surest way of retaining that ground already gained by remaining steady in the present emergency. Do not under any circumstances sell at less than posted prices and do not produce hot oil."

Production

Crude oil production has risen to the highest point attained since December 28, 1930, when daily production reached 565,800 bbls. and current production is higher than corresponding figures for any similar period since 1930. During June, 1931, production reached a high of 528,600 bbls. per day and this dropped to 479,500 bbls. during the last week in June of 1932. For the week ending June 18, 1933, production reached 480,000 bbls. per day and increased to 519,900 bbls. per day for the week ending June 17, 1934. Current production is more than 50,000 bbls. per day in excess of normal figures for this time of the month and this indicates a very definite weakening on the part of some operators.

It is quite likely that production will be severely reduced later in the month as has been customary for several years. Many operators produce their allowable in the early part of each month and then shut down or pump only a few hours daily. Many buyers are expected to hold a general meeting early next week, but the outcome of this confab remains to be seen. Most of the larger companies are anxious to stabilize conditions but they cannot consistently maintain prices if independent refiners persist in cutting prices and producers continue to dispose of production at prices substantially less than the prevailing market. In addition to this practice, conditions are further aggravated by persistent overproduction on the part of some operators in several fields.

Drilling Operations

There has been some discussion among operators as to the possible effect the present unsettled conditions will have on drilling operations in California and it seems to be the general consensus of opinion that development work will proceed unabated. As a matter of fact, operators will do more drilling in 1935 than last year and every indication points to the probability that this year will be well up toward the peak. Completions during the current week were rather numerous and as has been the case for the past several months they are spread out over a number of fields. Long Beach, Inglewood and Dominguez are undergoing a rather aggressive exploitation and developments indicate that further drilling will be done in each of these fields during the next several months.

Kenda finished an excellent new well up in the Kettleman North Dome Field this week when No. 45-28-J in Section 28-21-17 was brought in flowing 6,683 bbls. of exceptionally clean 35.9 gravity oil per day from 8,348 feet. This new well, which is also producing 12,120,000 feet of natural gas along with the oil was finished with a string of 6⅝-inch with perforations at 7,340-85 feet, 7,542-7,641 feet, and at 7,926-8,257 feet. The Union Oil has had the misfortune to run into another fishing job in No. 1 Lillis-Welsh and this jinx well seems to be in rather bad shape. The company has made good progress for the past several months and seemed to be getting along in good shape until the present trouble developed.

Mountain View

The Standard chalked up an excellent well in the Mountain View Field of Kern County early this week when No. 1 Abadie was finished flowing 6,388 bbls. of clean 31.6 gravity oil and 12,000,000 feet of natural gas per day from 5,320 feet. This new well has 234 feet of producing formation from which to produce. In the Edison Field, located southeast of Mountain View, the Shell successfully completed No. 1 Clare in Section 14-30-29 and this new well was brought in pumping 234 bbls. of 15.8 gravity oil per day from 2,980 feet. The Chaulk Oil Co. got an excellent well in this field when No. 1 in Section 5-30-29 was finished pumping 263 bbls. of very clean 16.1 gravity oil per day from 3,855 feet. There are several wells in the pay in this field and we may therefore anticipate additional completions during the next few weeks.

Inglewood

The Standard Oil Co. added a new well to its list of producers in the Inglewood Field of Los Angeles Basin this week when No. 73 on the Los Angeles Investment Co. lease was finished flowing 1,680 bbls. of clean 27.2 gravity oil and had been plugged back from 4,180 feet. The Standard has made locations for six new wells to be drilled in this field and work will get under way on this program immediately. Next week the company should list No. 74 on the L.A.I. lease as it is at present rotating ahead in the pay. Some of the new drilling projected by the Standard for this field will be for the account of the Shell-K. & I. Corp., which group recently purchased the holdings of the Pacific Western Oil Co. in this field.

In the Dominguez Field, the Union Oil Co. successfully completed No. 36 Hellman and this new well was brought in flowing 1,160 bbls. of clean 32.1 gravity oil per day from 4,461 feet. The Shell and Union have both projected an aggressive drilling program for this field during the remainder of the year and the former has already staked locations for seven new wells and is building rigs for two more. The Union contemplates the immediate drilling of four wells in the immediate future. No. 73 Reyes of the Shell nearly got away this week when it suddenly began to blow while the crew was making a water shutoff test at 4,283 feet.

Playa Del Rey

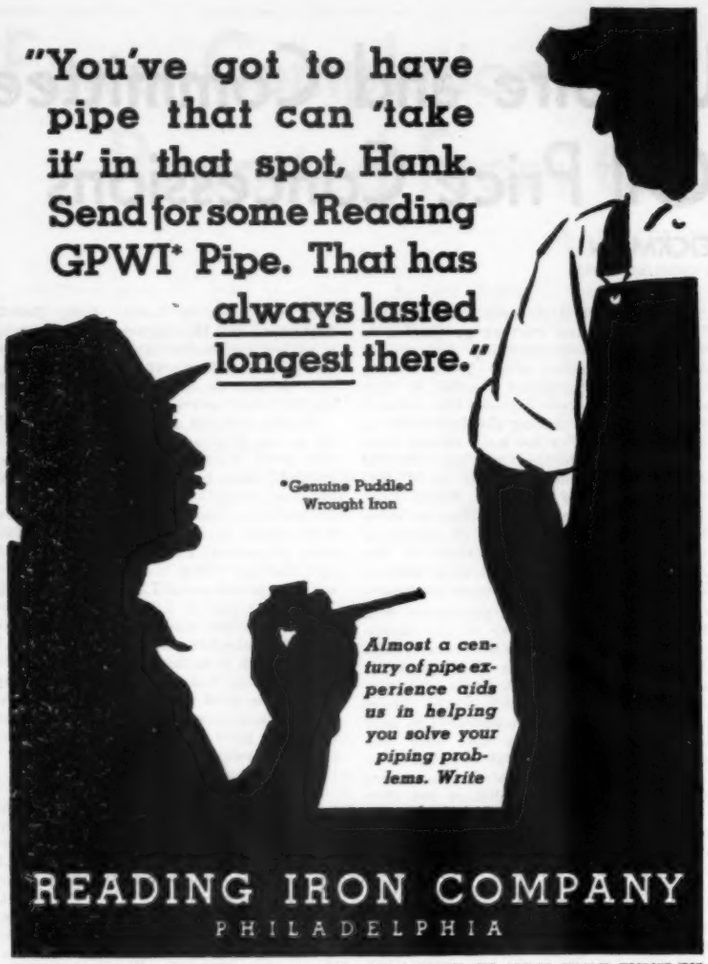
Two new wells were completed in the Playa Del Rey Field of Los Angeles

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	June 2		May 26			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic:						
Fuel oil	.....	.....	.....	.....	.....	6,895,102
Diesel and gas oil	.....	.....	.....	.....	527,098	931,159
Gasoline	191,100	27,300	111,998	16,000	3,197,811	2,779,524
Kerosene	.....	.....	77,311	11,044	669,351	552,406
Other finished oil	.....	.....	.....	.....	.....	15,171
Foreign exports:						
Crude oil	.....	.....	173,185	24,741	4,527,587	3,344,515
Fuel oil	480,522	68,646	172,408	24,630	5,311,190	5,276,406
Diesel and gas oil	183,629	26,233	52,458	7,494	1,950,051	1,713,861
Gasoline	309,922	44,275	144,261	20,609	2,294,835	1,696,108
Kerosene	38,008	5,430	.....	.....	547,994	774,399
Other finished oil	.....	.....	.....	.....	.....	3,529
Other unfinished oil	6,009	858	.....	.....	56,161	127,271
Coastwise-domestic:						
Crude oil	64,310	9,187	75,926	10,846	2,364,177	4,285,413
Fuel oil	295,393	42,199	285,101	40,729	3,964,296	4,373,103
Diesel and gas oil	15,951	2,279	32,816	4,688	429,384	354,059
Gasoline	269,890	38,556	161,119	23,017	3,863,130	4,703,995
Kerosene	10,785	1,541	.....	.....	57,833	74,418

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Fuel oil	.....	.....	.....	.....	.....	110 650
Diesel and gas oil	.....	.....	.....	.....	157,258	448,113
Gasoline	.....	.....	.....	.....	.....	72,625
Kerosene	.....	.....	.....	.....	149,715	197,498
Asphalt	66,550	9,507	.....	.....	209,047	.....
Lubricants	.....	.....	.....	.....	19,550	18,331
Foreign exports:						
Crude oil	171,880	24,544	80,814	11,545	1,355,979	803,155
Fuel oil	18,761	2,680	81,828	11,690	794,349	724,408
Diesel and gas oil	62,448	8,921	.....	.....	522,222	679,164
Gasoline	248,107	35,444	25,998	3,714	1,405,148	1,574,402
Kerosene	168,864	24,123	.....	.....	447,556	377,226
Lubricants	24,559	3,508	.....	.....	111,035	72,395
Other finished oil	.....	.....	.....	.....	.....	2,760
Other unfinished oil	.....	.....	.....	.....	.....	5,750
Coastwise-domestic:						
Fuel oil	115,940	16,563	286,184	40,883	1,958,712	1,624,299
Diesel and gas oil	.....	.....	35,804	5,115	134,687	95,371
Gasoline	31,180	4,454	234,202	33,458	1,927,927	1,582,264
Kerosene	.....	.....	12,735	1,819	30,844	48,112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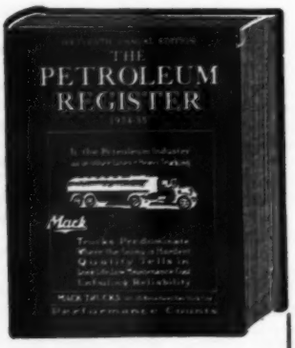

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THE OIL AND GAS JOURNAL, TULSA, OKLA.

Basin during the current week although neither showed large production. The Coast Oil Co.'s No. 1 Palisades, bottomed at 6,696 feet in Schist and finished with a 5-inch perforated liner was good for 1,820 bbls. of 22.1 gravity oil cutting 5 per cent. This cut seems to be clearing up, however, and consequently the production may turn out to be clean after the well gets under way. Charles W.

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Shell Oil Co., No. 5 Capitan, Santa Barbara Co.	5- 4-30	....	bldg. rig
General Petroleum, No. 15 Capitan, Santa Barbara Co.	32- 5-30	....	rig suspended
Freeman, M. J., No. 1 Purisima, Santa Barbara Co.	11- 7-33	998	suspended
Casmite Co., No. 1 Casmalia, Santa Barbara Co.	13- 9-35	1,745	suspended
Shell Oil Co., No. 1 Goleta, Santa Barbara Co.	10- 4-29	....	bldg. rig
Scully & Snyder, No. 1 Naples, Santa Barbara Co.	7- 4-29	6,447	suspended
Barnsdall-Rio Grande, No. 12 Elwood, Santa Barbara Co.	tideland	3,693	rd. sd. drlg.
Barnsdall-Rio Grande, No. 2 Elwood, Santa Barbara Co.	15- 4-29	6,454	gr. sd. drlg.
Bankline Oil Co., No. 8 Elwood, Santa Barbara Co.	tideland	3,572	cmtd.
Signal Oil & Gas Co., No. 4 Elwood, Santa Barbara Co.	tideland	2,554	sd. sh. drlg.
Caroline Spandling, No. 10 Elwood, Santa Barbara Co.	tideland	3,521	hd. sh. drlg.
Las Posas Pet., No. 1 Las Posas, Ventura Co.	22- 3-20	8,116	fishing
Calco Pet. Co., No. 1 Las Posas, Ventura Co.	17- 3-20	1,553	sd. sh. drlg.
Union Oil Co., No. 1 Bardsdale, Ventura Co.	12- 3-20	2,972	sd. sh. drlg.
Dabney, H. K., No. 1 Bardsdale, Ventura Co.	2- 3-19	510	suspended
Bankline Oil Co., No. 1 Sespe, Ventura Co.	36- 5-20	....	bldg. road
Oil Ridge Oil Co., No. 1 Ventura, Ventura Co.	1- 4-19	1,651	O. S. drlg.
El Rancho Oil Co., No. 1 South Mountain, Ventura Co.	9- 3-19	1,113	suspended
Texas Co., No. 128 South Mountain, Ventura Co.	4- 3-19	6,996	hd. sh. drlg.
Paloma Oil Co., No. 1 Susana, Ventura Co.	12- 2-18	1,238	sd. sh. drlg.
Bolsa Chica Oil Co., No. 2 Piru, Ventura Co.	4- 4-18	2,788	pump 180 b.d.
High Mesa Oil Co., No. 1 Ojai, Ventura Co.	16- 4-22	676	suspended
Prop. Service Corp., No. 1 Lloyd, Ventura Co.	24- 3-23	7,953	gr. sd. drlg.
Continental Oil Co., No. 4 San Miguelito, Ventura Co.	23- 3-24	4,662	fish. D.P.
Amerada Pet., No. 3 Blackwell Corner, Kern Co.	17-26-19	1,951	sd. sh. drlg.
Standard Oil Co., No. 1 Lost Hills, Kern Co.	3-26-20	4,143	cleaning out
Continental Oil Co., No. 1 McDonald, Kern Co.	7-28-20	5,000	sd. sh. drlg.
Belmac Drlg. Co., No. 1 McKittrick, Kern Co.	23-29-21	....	rigging up
General Pet. Co., No. 1 South Belridge, Kern Co.	36-28-21	11,377	suspended
Standard Oil Co., No. 1-A North Belridge, Kern Co.	36-27-21	8,618	P. B. 8,385
Standard Oil Co., No. 2 North Belridge, Kern Co.	36-27-20	7,983	hd. sh. drlg.
Belridge Oil Co., No. 32-35 North Belridge, Kern Co.	35-27-20	6,170	sd. sh. drlg.
Belridge Oil Co., No. 28-35 North Belridge, Kern Co.	35-27-20	3,976	sd. sh. drlg.
Union Oil Co., No. 19 North Belridge, Kern Co.	36-27-20	3,242	sd. sh. drlg.
Union Oil Co., No. 20 North Belridge, Kern Co.	36-27-20	1,095	cmtd.
Woods & Bailey, No. 1 McFarland, Kern Co.	16-26-26	....	material
Cimarron Oil Corp., No. 1 Delano, Kern Co.	14-25-27	2,351	sd. sh. drlg.
Standard Oil Co., No. 1 Delano, Kern Co.	1-25-23	2,455	gas; shut in
Standard Oil Co., No. 2 Delano, Kern Co.	1-25-23	3,256	P. B. 3,200
Standard Oil Co., No. 3 Delano, Kern Co.	12-25-23	3,550	sd. sh. drlg.
Standard Oil Co., No. 4 Delano, Kern Co.	34-24-23	....	rigging up
Trico Oil & Gas Co., No. 1 Delano, Kern Co.	3-25-23	2,525	gas well
Trico Oil & Gas Co., No. 2 Delano, Kern Co.	36-24-23	4,835	P. B. 2,223
Trico Oil & Gas Co., No. 4 Delano, Kern Co.	3-25-23	3,320	dry; abd.
Trico Oil & Gas Co., No. 5 Delano, Kern Co.	3-25-23	....	bldg. rig
Baker, Cliff, No. 1 Poso Creek, Kern Co.	33-27-28	....	rigging up
Associated, No. 2 Kern Front, Kern Co.	4-28-27	2,609	pump 130 b.d.
Kern River Oilfields, No. 3 Kern Front, Kern Co.	25-28-27	1,864	sd. sh. drlg.
Bishop Oil Co., No. 1 Kern Front, Kern Co.	26-28-27	....	bldg. rig
Deep Zone Oil Co., No. 1 Kern Front, Kern Co.	29-28-27	....	bldg. rig
Republic Petroleum, No. 1 Kern Front, Kern Co.	24-28-27	1,918	test W.S.O.
Pongratz Oil Co., No. 1 McVan Area, Kern Co.	2-27-27	1,404	dry; abd.
Golden Bear Oil Co., No. 1 Kern Front, Kern Co.	32-27-27	5,851	gr. sd. drlg.
Stevens Pet. Co., No. 1 Kern Front, Kern Co.	13-27-27	2,653	sd. sh. drlg.
Barnsdall Oil Co., No. 4 Mountain View, Kern Co.	32-30-29	3,791	sd. sh. drlg.
Hancock Oil Co., No. 7 Mountain View, Kern Co.	14-30-28	3,984	sd. sh. drlg.
Shell Oil Co., No. 2 Mountain View, Kern Co.	32-30-29	4,695	sd. sh. drlg.
C. C. M. Oil Co., No. 1 Mountain View, Kern Co.	11-30-28	5,196	sd. sh. drlg.
Union Oil Co., No. 7 Mountain View, Kern Co.	15-30-28	5,596	completing
Union Oil Co., No. 8 Mountain View, Kern Co.	23-30-28	4,890	sd. sh. drlg.
General Petroleum, No. 4 Mountain View, Kern Co.	14-30-28	5,628	completing
Vesta Pet. Co., No. 1 Mountain View, Kern Co.	19-30-29	4,862	sd. sh. drlg.
Mohawk Oil Co., No. 10 Mountain View, Kern Co.	30-30-29	5,286	sd. sh. drlg.
Mohawk Oil Co., No. 11 Mountain View, Kern Co.	30-30-29	3,481	sd. sh. drlg.
Mohawk Oil Co., No. 12 Mountain View, Kern Co.	30-30-29	....	bldg. rig
Sovereign Oil Co., No. 4 Mountain View, Kern Co.	30-30-29	6,000	sd. sh. drlg.
Jergins Trust, No. 6 Mountain View, Kern Co.	30-30-29	5,400	sd. sh. drlg.
Standard Oil Co., No. 7 Mountain View, Kern Co.	13-30-28	5,370	sd. sh. drlg.
Standard Oil Co., No. 8 Mountain View, Kern Co.	23-30-28	....	rig suspended
Star Petroleum, No. 1 Mountain View, Kern Co.	23-30-28	5,516	suspended
Ohio Oil Co., No. 1 Mountain View, Kern Co.	33-30-29	5,990	suspended
Ohio Oil Co., No. 2 Mountain View, Kern Co.	33-30-29	5,271	sd. sh. drlg.
Mountain View Oil Co., No. 1 Mountain View, Kern Co.	25-30-28	5,650	repair csg.
Jergins Trust, No. 6 Edison, Kern Co.	24-30-29	1,315	rig to pump
Jergins Trust, No. 7 Edison, Kern Co.	13-30-29	1,285	rig to pump
Jergins Trust, No. 8 Edison, Kern Co.	24-30-29	418	sd. sh. drlg.
Ellithorpe, R. E., No. 1 Edison, Kern Co.	18-30-30	281	sd. sh. drlg.
Shell Oil Co., No. 8 Edison, Kern Co.	14-30-29	....	rigging up
Chaulk Oil Co., No. 1 Edison, Kern Co.	5-30-29	3,855	pump 250 b.d.
Nelco Oil Co., No. 1 Edison, Kern Co.	5-30-29	3,018	suspended
General Pet., No. 5 Edison, Kern Co.	15-30-29	3,598	hd. sd. drlg.
General Pet., No. 6 Edison, Kern Co.	24-30-29	....	bldg. rig
Appling, C. E., No. 1 Edison, Kern Co.	4-30-29	3,454	hd. sd. drlg.
Berry Oil Co., No. 1 Edison, Kern Co.	10-30-29	....	rigging up
Goldman, Frank, No. 1 Edison, Kern Co.	30-29-20	693	will abdn.
Woodward Oil Co., No. 3 Edison, Kern Co.	36-29-29	685	suspended
Woodward Oil Co., No. 4 Edison, Kern Co.	36-29-29	460	cmtd. 300
Woodward Oil Co., No. 5 Edison, Kern Co.	36-29-29	645	cmtd. 630
Lucas, Don, No. 1 Edison, Kern Co.	26-29-29	486	sd. sh. drlg.
General Pet., No. 1 Arvin, Kern Co.	1-32-29	4,792	hd. sd. drlg.
Hall-Baker Co., No. 1 Arvin, Kern Co.	16-31-30	1,250	pump water
Hall-Baker Co., No. 3 Arvin, Kern Co.	21-31-30	906	sd. sh. drlg.
Hutcheson & Osborne, No. 1 Arvin, Kern Co.	32-30-30	....	rigged up
Sea Cliff Oil Co., No. 1 Greenfield, Kern Co.	7-27-28	6,795	sd. sh. drlg.
Fullerton Oil Co., No. 1 Semi-Tropic, Kern Co.	1-27-22	2,391	gas; shut in
Fullerton Oil Co., No. 2 Semi-Tropic, Kern Co.	14-27-23	2,463	gas; shut in
Fullerton Oil Co., No. 3 Semi-Tropic, Kern Co.	9-27-23	1,571	sd. sh. drlg.
Fullerton Oil Co., No. 4 Semi-Tropic, Kern Co.	26-27-23	1,956	sd. sh. drlg.
Fullerton Oil Co., No. 5 Semi-Tropic, Kern Co.	8-27-23	....	bldg. rig
Fullerton Oil Co., No. 6 Semi-Tropic, Kern Co.	26-27-23	....	bldg. rig
Standard Oil Co., No. 2 Semi-Tropic, Kern Co.	5-27-23	3,380	sd. sh. drlg.
Standard Oil Co., No. 3 Semi-Tropic, Kern Co.	7-27-23	2,397	sd. sh. drlg.
Standard Oil Co., No. 4 Semi-Tropic, Kern Co.	9-27-23	106	sd. sh. drlg.
Standard Oil Co., No. 5 Semi-Tropic, Kern Co.	9-27-23	....	rigging up
Standard Oil Co., No. 6 Semi-Tropic, Kern Co.	8-27-23	....	rigging up
Standard Oil Co., No. 7 Semi-Tropic, Kern Co.	1-27-22	....	bldg. rig
Milham Expl. Co., No. 1 Semi-Tropic, Kern Co.	15-27-23	480	sd. sh. drlg.
Shell Oil Co., No. 1 Buena Vista, Kern Co.	9-32-25	6,864	sd. sh. drlg.
Bender, E. L., No. 1 Temblor, Kern Co.	2-29-20	975	cmtd. 740
Reserve Oil & Gas Co., No. 1 Tejon, Kern Co.	2-10-19	2,699	recmtd. 2,464
Reserve Oil & Gas Co., No. 3 Tejon, Kern Co.	12-10-19	401	sd. sh. drlg.
Silver Gate Oil Co., No. 1 Tejon, Kern Co.	7-10-19	751	sd. sh. drlg.
Taft Well Drlg. Co., No. 1 Kreyenhagen, Fresno Co.	33-22-16	2,353	sd. sh. drlg.
Standard Oil Co., No. 1 Coalinga, Fresno Co.	13-20-14	657	rig to pump
Wellington Oil Co., No. 1 Coalinga, Fresno Co.	14-20-14	1,170	hd. sd. drlg.
Union Oil Co., No. 1 Lillis-Kettleman, Fresno Co.	24-21-16	10,944	redrlg. 8,504
K. N. D. A., No. 56 Kettleman, Kings Co.	8-22-18	10,249	reaming
Standard, No. 2 Kettleman Middle, Kings Co.	29-23-19	6,700	br. sh. drlg.
Continental Oil Co., No. 1 Kettleman-South, Kern Co.	7-25-20	6,831	hd. sd. drlg.
Farrel Pet., Well No. 1, San Luis Obispo Co.	15-31-12	1,672	sd. sh. drlg.
Willett Oil Co., No. 1 Cholame, San Luis Obispo Co.	10-25-15	3,687	suspended
Kings River Oil Pool, Well No. 1, Tulare Co.	29-16-22	3,265	hd. sd. drlg.
Schuster, C. R., No. 1 Tulare, Tulare Co.	27-22-23	....	rig suspended
Commonwealth Consd. Gas, No. 1 Tulare Lake, Kings Co.	21-22-20	2,490	gas well
Commonwealth Consd. Gas, No. 2 Tulare Lake, Kings Co.	21-22-20	710	sd. sh. drlg.
Amerada Pet., No. 1 P. L. D., San Joaquin Co.	15- 2-5	5,696	hd. sh. drlg.
Pure Oil Co., No. 1 Chowchilla, Madera Co.	7-10-14	8,402	gas well; idle
Northern Counties Pet., No. 1 Tehama, Tehama Co.	25-24-3	4,363	hd. sh. drlg.
Texas Co., No. 1 Petrolia, Humboldt Co.	1- 3-2	6,163	sd. sh. drlg.
Shell Oil Co., No. 1 Branch, Monterey Co.	34-24-10	2,696	sd. sh. drlg.

Fourl, who focused the attention of operators on the Palisades section of the field several months ago added another well to his list of producers by finishing No. 4 Del Rey flowing 1,890 bbls. of 22.7 gravity oil per day from 6,524 feet at which point the bit was stopped in the Schist.

Three new wells and one recompletion were credited to the Long Beach Field during the current week and a check indicates the probability of several more during the forthcoming seven-day period. The R. R. Bush Oil Co. successfully finished No. 1 H & W and this new well was brought in pumping 301 bbls. per day from 4,470 feet. This well is located at St. Louis and Twenty-first Street. The Magnolia Oil Co.'s well No. 2 Signal at California and Twenty-ninth Street was good for 288 bbls. of 22.6 gravity oil per day from 3,382 feet. The Milpet Corp.'s No. 8 Campbell at Hill and Gaviota, another new well finished this week was good for 381 bbls. of 26.1 gravity oil per day on a compressor from 4,160 feet after the hole had been plugged back from 4,225 feet. The output of this well is still cutting 38 per cent and may necessitate another cement plug. The recompletion listed this week was No. 10 Booth of the Richfield Oil Co., which was returned to production pumping 130 bbls. of 27.1 gravity oil per day from 4,295 feet after the hole had been plugged back from 6,430 feet.

Huntington Beach

The California legislature is still juggling with the tideland development bill which would throw open the Huntington Beach tidelands for drilling by erecting islands out in the open ocean a few hundred feet offshore. One day the senate passes it and the next day reconsiders it and then the assembly passes it and recalls it. One bill would give exclusive rights to the Gilmore Oil Co. and another would give the littoral owners of property the right to exploit the tidelands. The Union Oil Co. recompleted No. 6 Brooks in this field early in the week and this well was returned to production pumping 60 bbls. of 26.7 gravity oil per day after the hole had been plugged back to 4,370 feet. In the Santa Fe Springs Field, the Union finished No. 75 Bell doing 330 bbls. of 31.8 gravity oil per day on gas lift and completed No. 78 Bell pumping 198 bbls. of clean 30.9 gravity oil per day. These two new wells will be followed into completion by several more during the next month. No. 75 Bell was bottomed at 6,975 feet and No. 78 Bell was finished at 4,475 feet.

Mount Poso

The Shell Oil Co. got a good well when No. 20 Vedder in the Mount Poso Field of Kern County was completed pumping 641 bbls. of 16.1 gravity oil per day from 1,685 feet and unless something unforeseen develops should add another new well to its list in this field next week at No. 3 Mathews. It standing cemented on top of the pay at 1,580 feet. The Union Oil Co. should also finish a new well in this field within the next few days. In the Round Mountain Field the Honolulu Oil Corp. is rigging up pumping equipment preparatory to completing well No. 16 in Section 18-28-29 at 2,282 feet. This project should prove to be a good producer.

Two new wells were finished in the Kern River Field this week and we may anticipate additional completions during the course of the next several weeks as operators are pursuing an aggressive drilling campaign extending over several sections. The Associated's No. 1 Premier-fee, bottomed at 2,609 feet and finished with a 5-inch perforated liner, was brought in pumping 132 bbls. of clean 14.3 gravity oil per day. The Chanslor-Canfield Midway Oil Co. successfully completed its well No. 44 in Section 23-28-27 and this new producer was good for 280 bbls. of clean 15.8 gravity oil per day from 2,093 feet. In the Fruitvale Field of Kern County, the Western Gulf is working on two potential completions and these two wells should be tanking oil within the next week or 10 days. The Paroil Co. recompleted its No. 1 Bitner in this field after plugging back the hole to 3,741 feet from which depth it was good for 90 bbls. of 18.4 gravity oil cutting 24 per cent.

In the Piru section of Ventura County, the Bolsa Chica Oil Co. completed No. 2 Snow and this new well was brought in pumping 209 bbls. of relatively clean 24.3 gravity oil per day from 2,788 feet. The Shell Oil Co. has recompleted No. 67 Taylor in the Ventura Avenue Field after redrilling and deepening the hole from 5,043 feet to 7,351 feet. This well was finished on a compressor doing 157 bbls. of 28.9 gravity oil per day. In the Midway-Sunset Field of Kern County, the Standard Oil Co. has completed No. 119-15-D and this new well was good for 377 bbls. of clean 26.7 gravity oil per day on the beam from 3,138 feet after the hole had been finished with a 7-inch liner.

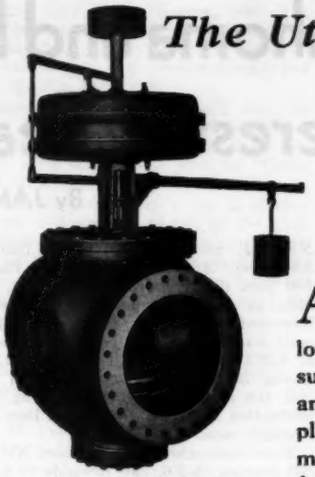
EAST TEXAS DIRECTORY

The East Texas Field is of such importance it has a special oil field directory, issued by Wimberly Report Service, Kilgore, Tex., and compiled by G. E. Wimberly, statistician. In addition to a very interesting table of statistics, the book contains directory of operators, pipe line companies, refineries, casinghead plants and lists of allied companies doing business in the field.

Copies may be secured from Wimberly Report Service, Box 442, Kilgore, Tex.

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Allen Bros., No. 1 Athens, Los Angeles Co.	18- 3-13	....	bldg. rig
Associated Oil Co., No. 4 Inglewood Deep, Los Angeles Co.	7- 2-14	3,161	sd. sh. drlg.
Scientia Oil Co., No. 1 Inglewood Deep, Los Angeles Co...	7- 2-14	4,480	sd. sh. drlg.
Standard Oil Co., No. 5 Inglewood Deep, Los Angeles Co.	17- 2-14	6,284	wash perf.
Standard Oil Co., No. 6 Inglewood Deep, Los Angeles Co.	17- 2-14	4,060	flow 1,685 b.d.
Shell Oil Co., No. 3 Inglewood Deep, Los Angeles Co. ...	8- 2-14	3,981	sd. sh. drlg.
Ohio Oil Co., No. 17 Del Rey, Los Angeles Co.	28- 2-15	3,853	O. S. drlg.
Bel-Mar Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	2,780	suspended
Harper & Williams, No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,000	sd. sh. drlg.
Coast Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,696	flow 1,805 b.d.
McAdams, Ed, No. 2 Del Rey, Los Angeles Co.	27- 2-15	6,140	cmtd. 6,060
Dabney Pet. Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	....	bldg. rig
Ritelube Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,975	50 b.d. comp.
Mathews Pet. Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,360	sd. sh. drlg.
Birch Royer Oil Co., No. 1 Del Rey, Los Angeles Co.	34- 2-15	6,372	sd. sh. drlg.
Embie Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	5,791	sd. sh. drlg.
Joyce Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	7,693	cmtd. 6,450
Royalty Serv. Corp., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,276	sd. sh. drlg.
Union Oil Co., No. 12 Del Rey, Los Angeles Co.	27- 2-15	5,886	cmtd.
Union Oil Co., No. 13 Del Rey, Los Angeles Co.	27- 2-15	2,987	sd. sh. drlg.
Herndon Dev. Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	....	rigging up
Treasure Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	....	bldg. rig
West American Oil Co., No. 1 Bandini, Los Angeles Co. ..	17- 2-12	3,182	sd. sh. drlg.
Western Gulf, No. 1 Bandini, Los Angeles Co.	16- 2-12	5,182	sd. sh. drlg.
Vanco Dev. Co., No. 1 Artesia, Los Angeles Co.	25- 3-12	4,565	sd. sh. drlg.
Monarch Oil Corp., No. 1 Topango, Los Angeles Co.	5- 1-16	....	rigging up
Texas Co., No. 1 Montebello, Los Angeles Co.	5- 2-11	4,000	hd. sd. drlg.
Universal Consd., No. 2 Montebello, Los Angeles Co.	5- 2-11	5,990	will P. B.
Woodward Oil Co., No. 1 Montebello, Los Angeles Co. ...	4- 2-11	2,000	sd. sh. drlg.
Wilshire Oil Co., No. 1 Montebello, Los Angeles Co.	5- 2-11	3,000	sd. sh. drlg.
Frontier Oil Co., No. 1 Pico, Los Angeles Co.	7- 3-11	3,600	suspended
Pressel & Tull, No. 1 Puente Hills, Los Angeles Co.	30- 2-9	4,337	suspended
Barstow Oil Co., No. 1 Saugus, Los Angeles Co.	35- 5-16	4,040	suspended
International Dev. Co., No. 1 Saugus, Los Angeles Co.	34- 5-16	4,325	P. B. 1,501
Wilshire Oil Co., No. 1 Newport, Orange Co.	29- 6-10	972	hd. sd. drlg.
Great American Pet. Co., No. 2 East Coyote, Orange Co.	22- 3-10	3,474	pump water
Viking Oil Co., No. 1 Richfield, Orange Co.	29- 3-9	2,900	hd. sd. drlg.
Great American Pet. Co., No. 4 Chino, San Bernardino Co.	7- 2-8	976	hd. sd. drlg.



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Noble, Oklahoma and Pontotoc Counties Provide Week's Interesting Features in Oklahoma Fields

By JAMES McINTYRE

The discovery of Siliceous (Arbuckle) lime production in the old Billings Pool in Noble County; more gushers in the Edmond Pool in Oklahoma County; 26 new locations staked in the Fitts Pool and more big wells completed in that pool, and a good-looking test near Britton in Oklahoma County, were the outstanding features in Oklahoma in the past week.

Slick-Urschel, Inc.'s No. 1 Owens, SE cor. Section 19-13-3w, in the Britton area in Oklahoma County, and 4 miles south of the Edmond Pool, was drilling Wilcox sand at 6,762-73½ feet and flowing 21 bbls. per hour, but was to be drilled deeper. At a total depth of 6,767 feet it flowed 110 bbls. in nine hours, and at 6,773½ feet it flowed 168 bbls. in eight hours. In the Edmond Pool, Mid-Continent Petroleum Corp.'s No. 3 Young, SW SE NE Section 31-14-3w, made a potential flow of 1,522 bbls. in four hours with gas at the rate of 27,500,000 feet per day.

Love County, south of Carter, east of Jefferson and west of Marshall Counties, all of them oil producing, has never shown any oil production. Sinclair Prairie Oil Co. has made a location for No. 1 Stockton, SE SE SW Section 26-6s-2w, in the western part of the county on a block of about 3,000 acres. The contract calls for a 6,000-foot test. Twin State Oil Co., Phillips Petroleum Co., Marathon Oil Co., Walter Neustadt, Waco Turner, J. Ben Russell, and Max Westheimer all have acquired acreage in the county.

The old Tex-O-Kan Oil Co.'s No. 1 Acre, C SW NE Section 14-24-11w, in Alfalfa County, will be deepened to 7,500 feet. It has been shut down at 6,460 feet for months. It slops over the top of the casing at intervals, producing from the Mississippi lime. The Olson Drilling Co. will do the drilling and 11 oil companies will contribute to the expense for the purpose of giving that part of Alfalfa County a thorough test and to get a line on the geology. The companies interested include Marathon, Mid-Continent, Skelly, Twin State, Margay, Texas, Indian Territory, Phillips, Empire, Eason and Ramsey.

In the Fitts Pool

Completions in the Fitts Pool in the past week included the following wells:

Magnolia Petroleum Co.'s No. 3 Schaffer, NE SE NW Section 25-2-6, Bromide at 4,223 feet, sands at 4,319 feet and 4,390 feet, flowed 400 bbls. in one hour while running casing.

Magnolia Petroleum Co.'s No. 4 Schaffer, SE SW NW Section 26-2-6, first Bromide sand at 4,260 feet, second sand at 4,343 feet, total depth 4,360½ feet, flowed 768 bbls. in three hours through casing and 106 bbls. the fourth hour through tubing. Gas was estimated at 2,000,000 feet.

Phillips Petroleum Co.'s No. 10 Norris, 982 feet from north and 899 feet from west lines of SW quarter Section 25-2-6, Bromide sands at 4,050 feet and 4,228 feet, total depth 4,260 feet, flowed 380 bbls. the first 15 minutes through casing and 641 bbls. the next three hours through tubing, gas estimated at 2,500,000 feet per day. The well was given a potential of 5,016 bbls. per day.

Stanolind Oil & Gas Co. and others' No. 6 Norris Royalty Co., SW SW SE Section 25-2-6, Bromide at 4,150 feet, sands at 4,246 feet and 4,314 feet, total depth 4,315 feet; flowed 1,603 bbls. in eight hours through casing.

Moore and others' No. 4 Akers, NW NW NE Section 36-2-6, Viola lime at 3,865 feet. At 4,060 feet the well flowed 100 bbls. in an hour; at 4,075 feet, 230 bbls. in an hour, and at 4,125 feet it increased to 323 bbls. in an hour. Bromide was hit at 4,210 feet and first sand at 4,315 feet, total depth 4,360 feet. It flowed 569 bbls. in one hour and 443 bbls. the second hour through casing. The production is coming from Viola lime and Bromide sand.

Moore and others' No. 5 Akers, NE SE NE Section 36-2-6, had Bromide at 4,045 feet, sands at 4,150 feet and 4,230 feet, McLish at 4,275 feet, total depth 4,280 feet. Flowed 486 bbls. in two hours through casing. Gas was estimated at 2,500,000 feet per day.

Moore and others' No. 7 Craddock, NE SW SW Section 29-2-7, Bromide at 3,900 feet, sands at 4,000 feet and 4,065 feet, McLish at 4,116 feet, total depth 4,121 feet, tested through tubing it made 423 bbls. in five hours.

Moore and others' No. 3 Woodruff, NE cor. NW SE Section 29-2-7, sands at 1,680-1,720 feet, total depth, gauged 75,000,000 feet of gas.

Carter Oil Co.'s No. 14 Richards, SW SE SE Section 30-2-7, Bromide at 3,795 feet, sands at 3,895 feet and 3,995 feet, McLish at 4,015-17 feet, total depth; 661 bbls. in 2 hours and 40 minutes through casing.

Carter Oil Co.'s No. 15 Richards, NW SW SE Section 30-2-7, Bromide at 3,910 feet, sands at 4,020 feet and 4,110 feet, McLish at 4,130-35 feet, total depth; 1,012 bbls. in two hours through casing.

Edward H. Moore and associates made 20 locations on their acreage in the Fitts Pool in the past week and this fact was the most important news out of that area. These included No. 6 McKoy, SW SW SW Section 28-2-7; No. 7 Harper, NW SW NW SE Section 29-2-7; No. 3 McKoy, NW SE SE Section 29-2-7; No. 4 McKoy, SW SE SE Section 29; No. 5 McKoy, SE SE SE Section 29; No. 6 Showers, SW SE NW Section 29; No. 7 Showers, SE SE NW Section 29; No. 8 Showers, NW SE NW Section 29; No. 11 Wirick, SE SW SE Section 29; No. 12 Wirick, NE SW SE Section 29; No. 5 Woodruff, NE NE SE Section 29; No. 6 Woodruff, SE NE SE Section 29; No. 7 Woodruff, SW NE SE Section 29; No. 8 Woodruff, SE NW SE Section 29; No. 6 Benton, SW NE NW Section 32-2-7, cellar and pits; No. 7 Benton, SE NE NW Section 32; No. 1 Cashin, NW NE NE Section 32; No. 2 Cashin, NE NE NE Section 32; No. 2 Mobley, NE NW NE Section 32; No. 3 Mobley, SW NW NE Section 32. Other first reports on new work in the field included Carter Oil Co.'s No. 1 Lucy Brown, NW SE SE Section 25-2-6, waiting for cement after plugging back from 4,300 feet to 4,280 feet; Magnolia Petroleum Co.'s No. 6 Schaffer, NW SE NW Section 25-2-6, rigging up rotary; Phillips Petroleum Co.'s No. 15 Norris, SE SW SW Section 25-2-6, location; Magnolia Petroleum Co.'s No. 1 J. Norris, SE SE NE Section 26-2-6, cellar and pits; Burke-Greis Oil Co.'s No. 4 Chambers, NE NW NW Section 36-2-6, location; Skelly Oil Co.'s No. 1 Minnie Akers, SE SW NE Section 36-2-6, location.

Amerada Petroleum Corp.'s No. 1 Smith, SE SW NW Section 28-2-7, had Bromide at 3,923 feet, sands at 4,035 feet and 4,117 feet, and McLish at 4,140-54 feet, total depth. After being on gas pressure for 16 hours the well made 168 bbls. of oil. It is the most easterly drilling well in the Fitts Pool, which gives it unusual interest. It has not had a real production test, but if results are not satisfactory it may be acidized.

In northern Pontotoc County, Morris & Wilson's No. 1 Call, 1,120 feet north and 1,010 feet west of C Section 22-5-8, in the Allen Field, is a 20-bbl. pumper, completed in sand at 771-93 feet.

Oklahoma Production

Estimated daily average production of Oklahoma for the week ending June 15 and for the preceding week follows:

	Barrels	
	June 15	June 8
Allen	8,150	8,250
Asher-West Asher	1,300	1,300
Burbank	8,600	8,650
South Burbank	11,250	11,000
Balance Osage	27,250	27,000
Blackwell	4,825	4,825
Bristow-Slick	9,100	9,100
Chandler	5,000	5,000
Crescent	6,050	5,150
Cromwell	4,350	4,350
Cushing-Shamrock	13,300	13,300
Duncan district	4,150	4,200
Edmond	3,425	2,725
Fish	8,425	9,550
Fitts	16,775	8,075
Gray	2,100	1,925
Graham	3,975	3,950
Healdton	9,425	9,400
Hewitt	4,800	4,800
Holdenville	1,575	1,600
Keokuk	2,500	1,950
Konawa	1,775	1,950
Lucien	10,900	10,675
Marshall-Lovell	1,050	1,000
Oklahoma City	168,726	142,300
Papoose	1,325	1,300
Polo	3,600	2,725
Sasakwa and townsite	2,825	2,825
Sholem Alechem	4,050	4,000
Seminole Field:		
Bowlegs	11,625	10,825
Carr City	6,425	4,425
Earlsboro	10,325	10,550
East Earlsboro	9,675	9,825
South Earlsboro	1,375	1,250
Little River	15,060	15,075
East Little River	800	825
Maud	1,250	1,200
Mission	3,250	3,300
Seminole	10,850	8,950
East Seminole	1,500	1,075
Searight	4,320	3,950
Total Seminole	76,455	70,750
St. Louis-Pearson	27,975	25,200
Tatums	5,000	5,100
Tonkawa-Garber-Thomas	5,975	6,000
Wewoka	3,525	3,525
Yale-Jennings	5,100	5,100
Other pools	57,619	57,625
Total Oklahoma	532,225	487,675

Greater Seminole Field

Completions in the Greater Seminole Field were as follows:

Amerada Petroleum Corp.'s No. 1 Smith, NE NE NW Section 6-6-5, in the Sacred Heart Pool, Pottawatomie County, deepened from 4,104 feet to 4,466 feet, Wilcox sand, where a showing of oil and water was found, was plugged back to 4,150 feet. It produced 66 bbls. of oil and 150 bbls. of water in 15 hours on the pump, from Simpson Dolomite topped at 4,063 feet.

Mid-Continent Petroleum Corp.'s No. 2 Gassoway, NE SE SE Section 14-6-5, on the Seminole side of the township, pumped 360 bbls. of oil initially from Simpson Dolomite topped at 3,765 feet. It had been drilled to first and second Wilcox sands at 3,849-53 feet and 3,937-38 feet, going into salt water in the second sand, and was plugged back to 3,923 feet.

Mudge Oil Co.'s No. 1 Pompey, C S half SW NE Section 9-6-7, in the Wolford Pool, Seminole County, was abandoned at 2,300 feet. The drill pipe be-

Wildcat Operations in Oklahoma

Week Ending June 15

NORTHERN OKLAHOMA

BECKHAM COUNTY

E. L. Martin et al's No. 1 Robberson, C NE SE Sec. 1-9-22w.
Machine.

BLAINE COUNTY

Earl Ingrahm et al's No. 1 Masters, SW NW NW Sec. 27-16-11w.
S.D. 1,340 ft.

CADDO COUNTY

Denver Prod. & Ref. Co.'s No. 1 Sah-Can, C SE SE Sec. 33-10-10w.
Drlg. 6,779 ft.

H. W. Lee et al's No. 1 Horton, NE NE NE Sec. 9-6-13w.
Rigged up; S.D.

H. W. Lee et al's No. 1 Stacey Ferrell, SW NE NE Sec. 3-6-13w; (2,000-ft. test).
T.D. 2,230 ft.; bldg. rig.

F. A. Turner et al's No. 1 Spain, NE NE SW Sec. 1-5-11w.
Rig up for 2,500-ft. test.

CANADIAN COUNTY

R. Carl Larkin's No. 1 Brobine, NW NW NE Sec. 33-13-5w.
Drlg. 7,228 ft.

CLEVELAND COUNTY

Sinclair Prairie et al's No. 1 Franklin, SE NW SE Sec. 21-10-2w.
Top second Wilcox 7,269 ft.; waiting for cement.

COAL COUNTY

Amerada Pet. Corp. and Stanolind Oil & Gas Co.'s No. 1 Travelers' Life, SW NW SE Sec. 28-1s-9e.
R.U. rotary.

Carter Oil Co. et al's No. 1 Thompson, C S½ NE NW Sec. 34-2-9.
T.D. 730 ft.; waiting for cmt.

J. D. Petty Oil Co.'s No. 1 McMillan, SW NW NE Sec. 16-1s-9.
Abd. 1,469 ft.

GARVIN COUNTY

Anderson & Kerr et al's No. 1 Rodke, NW NW SE Sec. 17-4-1w.
Location.

Charles Carter and W. S. Key, Inc.'s No. 1 Wood, C NW SW SE Sec. 5-4-3e.
S.D. 2,405 ft.

GRANT COUNTY

Holmerich & Payne's No. 1 Crouse, C NE SW Sec. 29-25-5w.
Drlg. lime 4,293 ft.

GREER COUNTY

M. C. Eat and R. C. Camp's No. 1 Simington, SW SE Sec. 29-5-21w.
T.D. 50 ft.

Gled Oil Co.'s No. 1 Leeker, SE cor. Sec. 6-4-21w.
Lost hole at 998 ft.; skidded machine.

Gled Oil Co.'s No. 1 Leeker, SE cor. Sec. 6-4-21w.
Drlg. 1,920 ft.

Massad & Caudle's No. 1 Crosnoe, SE SE SW Sec. 14-3-25w.
Moving in material.

Morgan et al's No. 1 Carder, C SW SE Sec. 19-4-22w.
T.D. 3,220 ft.; fishing for drill pipe.

H. N. Payne et al's No. 1 Tressell, NW cor. Sec. 1-7-22w.
T.D. 1,785 ft.; moving in tools to deepen.

W. Y. Rockwell et al's No. 1 Stephens, C S½ S½ SE Sec. 32-6-24w.
Machine.

D. E. Whatley et al's No. 1 Hamilton, NW SE Sec. 25-4-24w.
Cellar.

HARMON COUNTY

J. J. Mathis' No. 1 Keith, SE NW SW Sec. 12-5-26w.
Machine on ground.

HUGHES COUNTY

Caprock Oil Co.'s No. 1 Parks, SW SW SE Sec. 34-7-8.
Location.

Dandridge & Crane's No. 1 Mead, NW NW NE Sec. 17-5-9.
S.D. 1,710 ft.

Freeman et al's No. 1 Kite, NW NW NE Sec. 5-6-10.
Top sand 700 ft.; show oil; S.D.

Texas Co.'s No. 1 Keaton, NW SW Sec. 4-8-10.
Wilcox 4,062-79 ft.; dry; running Schlumberger test.

KAY COUNTY

Bay Oil Co.'s No. 1 Holden, SW SW SE Sec. 14-28-3.
6-in. 2,945 ft.; drlg. plugs.

Lewis Prod. Co.'s No. 1 Summers, SW cor. SE NW Sec. 17-27-2.
Drlg. 815 ft.

J. T. Lindsay's No. 1 Waggoner, NW NW NE Sec. 3-27-1.
Drlg. 1,410 ft.

Marshall, Haddock et al's No. 1 Hermes, SW SW NW Sec. 6-26-4.
T.D. 457 ft.; C.O.

(Continued on Page 88)

came stuck in the hole. The rig was skidded 50 feet west for a new hole.

Straughn and others abandoned the location for No. 1 Talley, NE SW NW Section 19-7-4, on which a rig was built nearly three months ago.

Mid-Continent Petroleum Corp.'s No. 1 Bruno, SW SE SE Section 31-7-5, Sacred Heart Pool, Pottawatomie County, was a hole full of water in Wilcox sand at 4,223-25 feet, and was plugged back to 4,208 feet. It pumped 120 bbls. of oil in 24 hours from Simpson Dolomite. It was and old well deepened from 4,119 feet, in Dolomite.

Limestone Oil & Gas Co.'s No. 1-A Narcome, SW NW NW Section 14-7-8, in the West Holdenville Pool, Hughes County, was abandoned as dry at 1,300 feet. Calvin sand at 1,190-1,230 feet showed only a little oil.

Limestone Oil & Gas Co.'s No. 1 Walker, deepened from 1,245 feet to 2,900 feet and plugged back to 1,260 feet where it was shot with 40 quarts, was a hole full of water and was abandoned.

Blackwell & Jones' No. 4 Ferguson, 1,000 feet from north and 130 feet from west lines of SW quarter Section 29-7-8, in the Fish Pool, found Wilcox sand at 4,126-29 feet, total depth, and flowed 969 bbls. in six hours through casing.

Empire Oil & Refining Co.'s No. 3 Davis-B, SW SE NE Section 30-7-8, Fish Pool, flowed 985 bbls. net oil in six hours through casing, from Dolomite at 4,075-4,136 feet, total depth. It had been treated with acid loaded with 111 bbls. of oil.

Magnolia Petroleum Co.'s No. 9 Reed, 910 feet north and 757 feet west of SE cor. Section 30-7-8, Fish Pool, topped Simpson Dolomite at 4,177 feet and Wilcox sand at 4,219 feet, total depth 4,220 feet. It produced from both formations, flowing 917 bbls. in six hours.

Winona Oil Co. and Jarvis & Holm, who opened the Wilcox sand production in the Fish Pool with their No. 1 Myers nearly a year ago, completed No. 5 Myers, 430 feet north and 530 feet east of C Section 31-7-8. It had Wilcox sand at 4,223½-28 feet, total depth, and flowed 698 bbls. in six hours through casing.

Turner and others abandoned No. 1 Williams, SW cor. Section 35-7-10, Hughes County, at 538 feet.

Carter Oil Co.'s No. 1 Alexander, 660 feet north and 330 feet east of C Section 14-10-6, South Keokuk Pool, Seminole County, had to be abandoned on account of hole trouble, total depth 4,204 feet. It had Misener sand at 4,192 feet. The rig was skidded 75 feet south.

Olean Petroleum Co.'s No. 3 George Fish, a wildcat in Okfuskee County, SE NE NW Section 36-10-11, was completed in Wilcox sand at 3,942-61 feet. It was given a small shot and produced 25 bbls. of oil and 53 bbls. of water in 24 hours.

First reports on new work in the Greater Seminole area include Mudge Oil Co.'s No. 1-A Pompey, 330 feet north and 610 feet east of C Section 9-6-7, Seminole County, rig; Newt Barrett's No. 1-B Brandenburg, NW SE NE Section 3-7-4, St. Louis Pool, Pottawatomie County, rig; Magnolia Petroleum Co.'s No. 11 Reed, 1,145 feet north and 280 feet west of SE cor. Section 30-7-8, Fish Pool, Seminole County, location; Carter Oil Co. and Shell Petroleum Corp.'s No. 1 Brown, 660 feet from east and 330 feet from south lines of SW quarter Section 23-8-5, Seminole County, location; Vandeventer and others' No. 1-A Bender, 330 feet southwest of C Section 3-8-8, Seminole County, drilling at 1,825 feet. Carson Oil Co.'s No. 1 Barnett, SE NE NE Section 36-8-11, location; Shell Petroleum Corp.'s No. 1 Harborn, SE SW SE Section 22-9-6, old well plugged back from 4,207 feet to 4,020 feet, and casing set at 3,800 feet, pumped 12 bbls. of oil in 24 hours; Campbell Oil Co.'s No. 2 fee, NE SW NE Section 17-9-7, Gilcrease sand at 3,334-74 feet, flowed 60 bbls. in 24 hours with 500,000 feet of gas; Campbell and others' No. 1 Knappenburger, SE NW NE Section 17-9-7, location; Carter Oil Co.'s No. 1-A Alexander, 585 feet north and 330 feet east of C Section 14-10-6, Pottawatomie County, rig skidded from No. 1; Simms Petroleum Co.'s No. 1 A. C. Hill, SW SE SE Section 12-10-11, Okfuskee County, location; Stekoll and others' No. 11 Hawkins, SW NW SE Section 6-11-12, rigging up.

Near Completions

In the St. Louis Pool, Smith & Scott's No. 3 Brandenburg, SE NW NE Section 3-7-4, swabbed 615 bbls. in 24 hours from Dolomite pay at 4,135-40 feet, total depth.

Sinclair Prairie Oil Co.'s No. 5 Myers, SW SE SE Section 32-7-4, in the south end of the St. Louis Pool, swabbed 178 bbls. of oil and 1,000 bbls. of water in 24 hours from Dolomite pay at 4,244-48 feet, total depth 4,250 feet. It will be plugged back to shut off water.

In the Fish Pool, Seminole County, Champlin Refining Co.'s No. 8 See, 990 feet south and 1,170 feet east of C Section 30-7-8, had a hole full of water at 4,127-30 feet. The well had swabbed and flowed 140 bbls. in seven hours at 4,110-25 feet.

Barnsdall Oil Co.'s No. 1-A Robertson, NW NE SE Section 30-8-4, Pottawatomie County, flowed 215 bbls. of oil in 15 hours from Hunton lime, top not given, total depth 4,415 feet, still in Hunton.

Texas Co.'s No. 4 Keaton, NW NW SW Section 4-8-10, Hughes County, a wildcat, had Wilcox sand at 4,062-79 feet and it was dry. Schlumberger test was to have been run.

Amerada Petroleum Corp.'s No. 10 Chase, SE NE SE Section 29-9-6, Seminole Pool, swabbed 42 bbls. of oil in two hours after a 20-quart shot in Wilcox sand at 4,104-24 feet.

Deep Rock Oil Corp.'s No. 2 Hagler, NE SE NE Section 19-9-7, in the East Seminole Pool, was treated with acid and an oil load. Later it made 694 bbls. of oil in 24 hours and on the following 48 hours, 370 bbls. per day, or 1,434 bbls. in three days.

Osage County

Completions in Osage County were as follows:

Murray Ringold's No. 7, 990 feet north and 50 feet east of C Section 25-21-8, lost the hole and was abandoned at 350 feet; Branstetter's No. 2, SW cor. NW SW SE Section 28-22-11, 150 bbls. from sand topped at 1,987 feet, oil at 2,005 feet, and total depth 2,059 feet. Mississippi lime was topped at 1,709 feet.

Lewis Production Co. and Continental Oil Co.'s No. 10, NW SE SW Section 16-24-7, in the Naval Reserve Pool, flowed and swabbed 240 bbls. from sand at 2,606-56 feet, which was shot.

Continental Oil Co. and Gypsy Oil Co.'s No. 13, SE NE NE Section 21-24-7, flowed and swabbed 228 bbls. from sand at 2,600-60 feet, total depth, which had been given a shot.

Lewis Production Co.'s No. 4, 980 feet south and 300 feet west of C Section 21-24-7, flowed and swabbed 70 bbls. from sand at 2,655-2,729 feet, total depth. It had been shot.

J. H. Alexander's No. 5, 1,210 feet north and 300 feet east of SW cor. Section 36-25-11, made a 50-bbl. completion from Bartlesville sand at 1,613-68 feet, shot with 140 quarts.

Bay and others' No. 1, SW cor. SW SE Section 14-26-6, was abandoned at 3,014 feet. It had a showing in Bartlesville sand at 2,907-62 feet; Chat at 3,005 feet, Mississippi lime at 3,006-14 feet. It was given a 60-quart shot at 2,912-36 feet and after being cleaned out pumped 12 bbls. in 24 hours. It was shot again with 140 quarts at 2,907-62 feet, but with no better results.

Enterprise Transit Co.'s No. 1 Mosier, SE SE NE Section 34-26-6, flowed 2,849 bbls. the first day and 2,865 bbls. the second day from pay at 2,834 feet, total depth 2,920 feet. Same company's No. 2 Mosier, SE SW NE Section 34-26-6, flowed 853 bbls. in 24 hours from sand at 2,845-2,919 feet.

Enterprise Transit Co.'s No. 1, 330 feet from south and 980 feet from west lines of NW quarter Section 35-26-6, was shot at 2,866-2,918 feet and flowed 2,858 bbls. in 24 hours.

Lewis Production Co.'s No. 1, 300 feet from north and 1,320 feet from west lines of SW quarter section 24-27-11, was abandoned at 1,965 feet. Bartlesville sand at 1,675-1,705 feet was dry, Burgess sand at 1,906-18 feet was dry, and it was bottomed in Mississippi lime.

Norbla Oil Corp. made a location for No. 2, 560 feet north and 780 feet east of SW cor. Section 4-20-10. Murray Ringold had machine in for No. 7-A, SW cor. NW SW NE Section 25-21-8; Central Petroleum Co. and others made location for No. 22, 990 feet south and 1,160 feet east of C Section 16-22-9; Lewis Production Co. made location for No. 9, NW SE NW Section 21-24-7; Enterprise Transit Co. made location for No. 3 Mosier, SE NE NE Section 34-26-6, and for No. 2 Williams, SE NW NW Section 35-26-6.

H. F. Worley and Bay Oil Corp.'s No. 1-A, 330 feet from north and 1,290 feet from west lines of SW quarter Section 25-22-7, swabbed 195 bbls. in nine hours. It had the top of the Hominy series at 2,800 feet, some gas at 2,883 feet, a small showing at 2,889-94 feet, and pay

(Continued on Page 84)

JERGUSON

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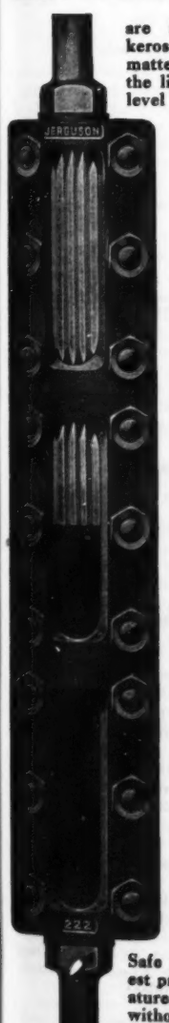

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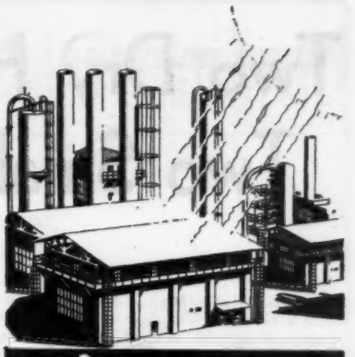

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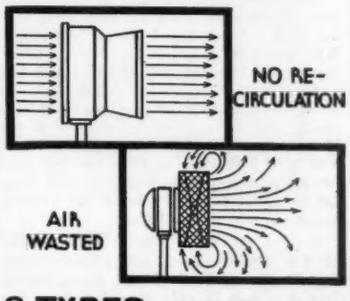

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Two Dry Holes Limit Crystal Field, Michigan; Two Small Semi-Wildcat Area Completions

By PAUL A. ELLIOTT
Staff Correspondent, Michigan Fields

MUSKEGON, Mich., June 17.—Despite a record of few new oil or gas producers of notable size, developments in Michigan last week pointed to the possibility of two new central state fields and concentrated interest in the new major Crystal Township, Montcalm Couny, field along the prevailing northwest-southeast trend in other Central Michigan fields.

Completion of two dry holes in Crystal Township, one east of a previous "duster" believed to have set the limit in this direction and the other about a mile southwest of the farthest west producer in the Crystal Pool, served to concentrate the attention of all operators particularly toward the comparatively untried northwest.

Two tests in New Haven Township, Gratiot County, one a mile and a half east of the discovery Leonard-Durbin well in Section 11, Crystal Township, and the other a mile farther east, confirmed indications the field will not extend far in this direction.

A dry hole on a wildcat location which previously had developed about 8,000,000 feet of gas in the Michigan Stray sands in Winfield Township, Montcalm County, about 30 miles northwest of the Crystal Pool, turned the attention of the operators back from the search for oil in the Dundee to prospecting for gas.

One other dry hole on a wildcat location in Chapin Township, Saginaw County, completed a disastrous week for four operators.

In contrast with the dark side of the picture was the drilling of two successful though small wells in semiwildcat territory in Jasper Township, Midland County, and Mills Township, Ogemaw County. A small Dundee producer also was completed in Porter Township, Midland County.

Crystal-Montcalm

The more disappointing of two "dusters" in Crystal Township was Fred Turner and others' No. 1 Jerry McConkey, NW SE SW Section 11-10n-5w, which topped the Dundee at 3,183 feet and had a hole full of water at 3,227 feet. It is located about three-quarters of a mile south and the same distance west of the McClanahan Oil Co.'s No. 1 Harry Flint, NW NW NW Section 11, estimated good for about 3,000 bbls. initial in the Dundee at 3,193 feet, 16 feet in the Dundee limestone two weeks before.

Gordon Oil Co.'s No. 1 Fred Smith, SE SW SW Section 1, east offset to Taggart Brothers, Inc.'s No. 1 Fred Smith, first dry hole in this direction from the discovery well, also struck bottom water at 3,254 feet and was completed at 3,308 feet after topping the lime at 3,222 feet. Little hope of production had been entertained since the failure of the Taggart-Smith, first rotary drilled hole in the field.

Five other tests were nearing the Dundee drilling at about 3,000 feet or deeper as follows: J. W. Leonard, Jr., trustee's No. 2 C. R. West estate, SE SE SW Section 2; Gordon Oil Co.'s No. 1 Frost heirs, SE SE SW Section 3; Snowden & McSweeney's No. 1 Wight heirs, NE NE NE Section 10, and two being drilled by T. F. Caldwell, Inc., the No. 1 W. W. Robbins, NE NE NE Section 3, and the No. 1 M. L. Johnson, NE NW NE Section 14.

The Caldwell-Robbins well was being most closely watched to indicate the hoped for northwest trend. The upper Traverse was topped at 2,717 feet and at 2,742 feet a good show of oil and gas was struck.

Located about three-quarters of a mile east and slightly north of the Robbins, Burnstein Oil & Gas Co.'s No. 1 Joseph J. Keel, SW SE SE Section 35-11n-5w, Ferris Township, Montcalm County, also was being watched as a test in which a similar show was reported in the upper Traverse. It also was drilling at about 3,000 feet.

Snowden & McSweeney's Wight heirs test, west offset to the McClanahan-Flint, also was being watched for a slight westward extension, while the Caldwell-Johnson well is about a mile due south of the discovery Durbin well.

Despite the limiting wells of the week, however, there is still space for a pool as large as the big Porter Township, Midland County, producing area, Michigan's greatest production center to date, in the proved and semiproved Sections 2, 3, 10 and 11 of Crystal Township.

Gratiot County

Completion of T. W. Kelly and V. E. Evans' No. 1 Anasthasia Pancak test, NW NW NW Section 18-10n-4w, New Haven Township, Gratiot County, as a "duster," located a mile and a half southeast of the Durbin, had a hole full of water at a total depth of 3,202 feet after topping the Dundee at 3,175 feet. It has been abandoned.

McClanahan Oil Co.'s No. 1 Arthur Akin, SE SE NE Section 17, another New Haven Township test located a mile farther east, also was reported to have drilled into water in the Dundee at about 3,200 feet after topping the limestone at 3,182 feet. It was shut down awaiting orders to deepen.

Strange & Fortney's No. 1 Bovee, NW NE SW Section 7, same township, about half a mile north and east of the Pancak, was drilling at more than 2,800 feet and expected to reach the Dundee this week.

Most important among the wildcats in this direction this week, however, was the Newark Gas & Syndicate's No. 1 George Beck, NE SE NE Section 29-10n-3w, drilling at more than 3,000 feet deep after topping the upper Traverse at 2,683 feet with a good show of oil at 2,688 feet. It probably will be completed this week.

The Rex Oil & Gas Co.'s No. 1 Morse & Biddle, NW SW SW Section 20, New Haven Township, also was nearing the Dundee as the week closed along with the Crystal Oil Co.'s No. 1 Shaver, NW NW NE Section 1, same township.

Midland County

Pure Oil Co.'s B No. 1 Anna Corning estate, C N NW NW Section 12-13n-2w, Jasper Township, Midland County, which was first drilled into the Dundee pay sands two weeks ago for an estimated 100 bbls. a day, was recognized as the discovery of a possible new pool between the Yost and Porter Fields. It was increased to a flow of about 200 bbls. a day by deepening and acid treatment at a total depth of 3,442 feet.

Pure's No. 6 C. D. Alexander, SE SE SE Section 18-13n-1w, Porter Township, also was estimated good for 125 bbls. a day in the Dundee, although it was drilled a little too deeply and struck bottom water at 3,359 feet. It was being plugged back before completion. Dundee limestone was topped at 3,415 feet.

The same company's No. 3 Howland, SW NW NW Section 23, Porter Township, was drilling below 3,300 feet and expected to be completed in the Dundee this week, while the No. 9 Mina Narmore, NW NW SE Section 16, Porter Township, is being deepened to the Dundee after producing from the Traverse for several weeks.

Of 26 unfinished tests in Midland County, 12 are Pure company projects.

Gill, Graves & Mechling's No. 1 Oviatt estate, SW SE SW Section 24-16n-2e, a Mills Township, Midland County, wildcat, is still shut down in the Dundee at about 3,300 feet with information withheld.

Ogemaw County

The other possible new pool was indicated when Thompson Brothers, Inc.'s No. 1 Mills Estate, NW SE SW Section 31-21n-4e, Richland Township, Ogemaw County, struck a good show of oil in the Dundee at 2,590 feet after topping the limestone at 2,447 feet. Drilling was to be continued and the hole treated with acid soon. The test is about 7 miles from nearest production in Section 6, Mills Township, 3 miles from the Stephen Forro No. 1 in Section 13, Mills Township, which was dry, plugged and abandoned two weeks ago and a mile east of an unsuccessful Pure test in Section 36, Mills Township, several years ago.

Operators were optimistic as the new test is reported 17 feet higher than the Pure test.

L. G. Thompson's No. 1 William Price, NW NW NE Section 31-22n-3e, Churchill Township, Ogemaw County, was reported without commercial showings in the Dundee, while D. F. Jones is planning to give an acid test to Frank C. Patterson and Otto F. Louis' No. 2 William J. Price, SE SW SE, same section, after cleaning up some trouble with the casing.

Montcalm-Mecosta

Failure to develop commercial oil production in a wildcat test in the northwest corner of Montcalm County led L. G. Thompson, an independent operator, to turn back for Michigan Stray gas sands in his No. 1 J. K. Knapp, E SE NE Section 17-12n-9w, Winfield Township well near the village of Amble.

This test struck an initial flow of about 6,000,000 feet a day of gas at a depth of 1,143 feet April 17 and increased the flow to 8,000,000 feet before drilling on to the Dundee for oil. The Dundee limestone was topped at 3,267 feet after a light show of oil in the upper Traverse at 2,825 feet, but drilled into water at 3,324 feet and was bottomed at 3,371 geet. Other gas tests probably will be drilled in the area where Mr. Thompson had a block of about 4,000 acres of leases. The test was recognized as the discovery of a new Central Michigan gas field when drilled into the Michigan Stray sands.

On a location 6 miles north and 3 miles west of the Knapp, the Jasmid Oil Corp.'s No. 1 Coopersville State Bank, C S half Section 22-13n-10w, Aetna Township, Mecosta County, will be deepened to the Dundee for oil after striking water in the Michigan Stray sands at 1,288 feet. A show estimated from 100,000 to as high as 1,000,000 feet of gas was encountered in the Michigan sands before the drill struck water.

The Jetter Oil Co. cased its No. 1 Daniel Pursley, NE SW SW Section 19-14n-10w, Mecosta Township and County, and was drilling into the Dundee at about 3,200 feet on a lease 6 miles north and 3 miles west of the Jasmid test.

Drilling of L. E. DuVall's No. 1 Mrs. Henry Eiknroch, NE NE NW Section 13-11n-10w, Pierson Township, Montcalm County, 2½ miles west and 5½ miles south of the Knapp well, has been resumed by James E. Flanagan, of Toledo, Ohio, who recently took over the test already drilled to a point not far above the Michigan Stray sands. Mr. Flanagan was having difficulty with a string of tools lost in the hole last fall. It had been shut down since at about 1,235 feet deep.

C. C. Goff and Frank Rabuck's No. 1 Frank and Clara Williams test, NE SW NE Section 14-12n-7w, Belvidere Township, Montcalm County, also was expected to drill into the Michigan Stray sands soon with possibilities of extending the Hunton - Millbrook - Belvidere Township gas pool at the junction of Montcalm and Mecosta Counties. It was cased at 1,239 feet on top of the sand.

The Lakeside Oil & Gas Syndicate's No. 1 Thomas Percy, C SE NE Section 22-15n-8w, Martiny Township, Mecosta County, also was about ready to drill into the Michigan gas sands at about 1,350 feet.

This section of Central Michigan is getting a greater gas play now as new markets are developing.

Isabella County

A show of about 500,000 feet a day of gas was encountered in the Wittmer Co.'s No. 1 A. A. Curtis test, C N NW SE Section 2-15n-4w, Isabella Township and County, but it is being continued to the Dundee for possible oil production.

Four other tests were nearing completion in the Dundee pay sands in Chippewa and Denver Townships. They include: Karl K. Liebrand, trustee's No. 1 Shaffer, NE NW NW Section 10-14n-3w, Chippewa Township, and Gordon Oil Co.'s No. 1 George Prout, NW NW NW Section 18-15n-3w, Denver Township. United Drillers, Inc.'s No. 1 John D. Vandercock, SE NE SE Section 24, Denver Township, and Henry L. McEvoy's No. 2 Stanley Demski, SE SW SE Section 28, same township, all drilling below 3,000 feet.

Miscellaneous

Chapin Oil & Gas Co.'s No. 1 Sutliff, an old wildcat test in Section 16-9n-1e, Chapin Township, Saginaw County, near the village of Ashley, was being abandoned after drilling into bottom water in the Dundee at 2,994 feet.

Sun Oil Co. was preparing to continue testing its No. 1 Mary Hines well in Section 31, Tobacco Township, Gladwin County, which was producing about 2 bbls. a day in the Dundee, while the Atrange Oil & Gas Co.'s No. 1 Spicer, Section 11, Beaverton Township, was drilling at about 2,800 feet and nearing the Dundee.

It was reported the Smith Petroleum Co. struck the Marshall at 1,391 feet and was drilling at 1,700 feet after passing through the Red Rock in its No. 1 Moser, C NE SE Section 20-17n-10w, Richmond Township, Osceola County test.

The Bornman, Laker Gas & Oil Corp. set 5-inch casing and was ready to drill into the oil sand in the No. 1 J. C. Boldt, SW SE NW Section 28-8n-16e, Grant Township, St. Clair County, a southeastern Michigan wildcat.

New Locations

State permits for 17 new tests included only five in the Crystal area, four in Crystal Township, Montcalm County, and one in Ferris Township, same county. Two were for locations in Porter Town-

ship, Midland County; two for Hinton Township, Mecosta County, tests, and the rest were scattered one to a township in six other counties covering a wide range, including central, southeast and middle eastern sections of the lower peninsula.

The Ferris-Montcalm County location was made by John F. Martin for the No. 1 William Atrait, SE SE SW Section 34-11n-5w. The Crystal locations included: George Henry Flynn's No. 1 Will DeYoung, NE NE NW Section 15-10n-5w; McClanahan Oil Co.'s No. 2 Harry Flint, SW NW NW Section 11, and No. 1-A Harry Flint, NE NW NW Section 11; and Snowden & McSweeney's No. 3 Wight heirs, SE NE NE Section 10.

Two locations for Porter-Midland are: Fred W. Turner's No. 2 Harry Bond, SW SE SE Section 7-13n-1w, and Strange & Fortney's No. 9 W. J. Campbell, NE NW SE Section 18, while the two in Hinton-Mecosta are: Guy M. Obenauer's No. 1 Henry Behrenwald, C NW NE Section 26-13n-8w, and the Gordon Oil Co.'s No. 1 Elsie Taylor, C SE NW Section 25.

Other Central Michigan locations include: Sun Oil Co.'s No. 1 John Peterson, C SW SE Section 19-17n-1w, Tobacco Township, Gladwin County; Sherrit Oil & Gas Co.'s No. 1 James H. Scheibe, C SW NE Section 13-15n-7w, Sheridan Township, Mecosta County; W. J. Bernier's No. 1 Charles Gatehouse, C NE SW Section 36-15n-6w, Sherman Township, Isabella County; and Jackson-Meyer-Schmidt, trustee's No. 2 Quincy L. Hughes, NW SE NE Section 19-15n-3w, Denver Township, Isabella County.

One permit is for a new test to be drilled by the Smith Petroleum Co. as the No. 2 David Soule, NE SE SE Section 20-10n-6e, Birch Run Township, Saginaw County. Another is for a south central test to be drilled by D. A. Burris of Mount Pleasant on the John Becker lease, C NW SE Section 35-8n-3w, Essex Township, Gladwin County.

Two are for new southeastern Michigan tests, the one taken out by the Co-Op Oil Co. for the No. 1 George Hartwick, NW SW SW Section 13-8n-9e, Oregon Township, Lapeer County, where several small producers already have been developed, and the other by the Michigan Montana Oil Co. for the No. 1 John Fogarty, SW SE NE Section 12-2s-8e, in Canton Township, Wayne County.

Deliveries to Calgary Refineries From the Turner Valley Field Larger in May

By VICTOR LAURISTON

Staff Correspondent, Canadian Fields

CHATHAM, Ontario, June 15.—Deliveries to the Calgary refineries from the Turner Valley Field for May totaled 79,481 bbls. bringing the total for five months to 405,696 bbls. The May total compared with 75,013 bbls. in April, while the total for the five months of 1934 was 450,953 bbls. Of the May deliveries, Imperial Oil Refineries, Ltd. took 7,536 bbls. of clear naphtha, 66,584 bbls. of discolored naphtha and 6,916 bbls. of light crude oil. Bell Refining Co. took 8,445 bbls.

Gas Strike on Watson

On the Watson structure, north and west of Lundbreck, Alberta, Mar Jon Oil Co.'s No. 3, LSD 3, Section 4-10-2w5, struck a small gas flow at 1,690 feet. It is a sweet gas and will probably be used to run the boilers. Mar Jon-Maxmont's No. 4, LSD 10, Section 20-9-2w5, is below 2,055 feet.

Turner Valley Field

In Section 28-18-2w5, South Turner Valley, British Dominion Oil & Development Corp.'s No. 4, LSD 6, is in the Dalhousie sand below 5,450 feet. Renfrow Royalties' No. 1, LSD 3, same section, is in hard formation below 5,210 feet and logging closely with the British Dominion well which got the Home sand at 5,240 feet. Farther south, Union-Freehold Oil Corp.'s No. 1, LSD 8, Section 21-18-2w5, has a fishing job in the top of the Madison lime at 5,610 feet.

On the east side, Nolan-Hungerford Royalties' No. 1, S half LSD 5, Section 34-18-2w5, is 100 feet in the Dakotas at 3,695 feet and waiting for casing. Livingston Syndicate's No. 1, N half same LSD, is shut down at 3,890 feet. On the west side, Turner Valley Royalties' No. 1, LSD 13, Section 28-18-2w5, is resuming from 3,060 feet.

In the North Turner Valley Field, Model Oils' No. 3, LSD 1, Section 22-20-2w5, offsetting Royalite Oil Co.'s No. 26 producer, spudded last week and is installing rotary outfit to continue from 100 feet.

Merland Oil Co.

Shareholders of Merland Oil Co., Calgary, have elected the following officers: President, M. M. Porter, Calgary; vice president, Carl Olsen, Turner Valley; secretary-treasurer, W. H. Thompson, Calgary; directors: D. A. Ross, Calgary; Gordon West, W. R. Sweeney, Toronto; F. A. Stevenson, Vancouver, British Columbia.

Tests in the Foothills

On the Highwood-Sinclair structure, south of Turner Valley, Maple Leaf Royalties' No. 1 Banner, LSD 6, Section 34-17-3w5, is pulling pipe and recasing to utilize a gas flow for drilling fuel. The flow, struck at 1,425 feet, is estimated around 1,500,000 feet a day.

On the Pekisko structure, Pekisko Hills Co.'s No. 1, LSD 6, Section 6-17-2w5, is resuming from 2,315 feet. Clarence Snyder will superintend the drilling.

On the Rickert structure west of Turner Valley, Paramount Oils' No. 1, LSD 2, Section 28-18-4w5, is making new hole below 3,600 feet after a fishing job.

Moose Dome Test

On the Moose Dome structure, work has been resumed on Moose Oils' No. 1, LSD 16, Section 29-22-6w5, with Elmer E. Jones as drilling superintendent. On removing the wood plug set at 2,818 feet, the drillers bailed some 150 feet of oil. Samples analyzed at Calgary showed boiling point, 166; endpoint, 444; residue, .50 per cent; loss, .50 per cent; recovery, 99 per cent; gravity, 48.5. Gas pressure was heavy, estimated as high as 2,000 points; the first test blew off the connections and a second is being made. Mose Oils' No. 2 is digging cellar in the same LSD. It is hoped to put No. 1 into steady production, utilizing the gas for drilling; most of the gas comes from the Devonian limestone. Officers of the reorganized Moose Oils, Ltd., are: President, E. B. Clarke; treasurer, John N. Burke, Vancouver; secretary, Doral H. Pilling; geologist, Loran H. Pilling; directors: C. F. Jamieson, Calgary; C. Spencer Clarke, Seattle; W. P. Lakin, Miles City, Mont.

Border Fields

In the Alberta end of the international Red Coulee Field, Vanalta's No. 7, LSD 3, Section 4-1-16w4, which failed to get production in the sand at 2,485 feet, will be deepened for a thorough test of the Madison limestone. Several tests in the Red Coulee Field have been carried to the Madison contact, but none drilled very far into the lime.

On the Cardston structure, Franco Oils' No. 1, LSD 6, Section 5-3-25w4, is standing at 2,700 feet waiting for casing after getting several shows of gas and oil.

On the Del Bonita structure, Terminal

(Continued on Page 84)

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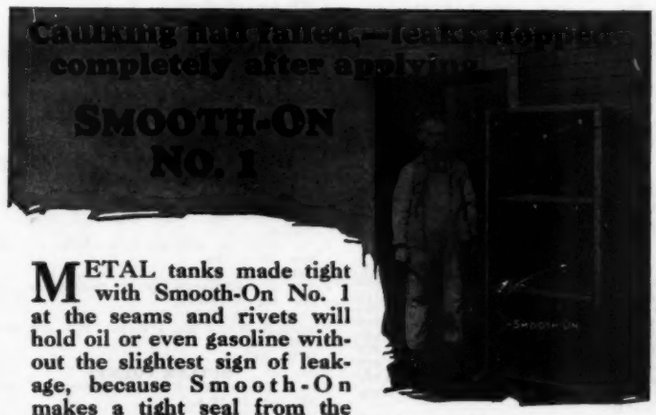

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Russell and Rice Counties Lead in Completions in Kansas; Prospective New Pool in Rice

By JAMES McINTYRE

Rice County and Russell County divided honors in the past week in the matter of wells completed, each having six. Nine of the dozen wells completed in the two counties were oil wells, one a gas well and two were dry holes. Barton, Ellsworth, McPherson, Reno, Butler, Greenwood, Cowley and Elk Counties supplied the other new wells of the week.

Rice County has a prospective new pool in Section 16-18-9w, where a wildcat well stood with a hole full of oil from Siliceous lime. It is Vickers Petroleum Corp. and others' No. 1 Gouldner.

The Lario Oil & Gas Co.'s No. 2 Whelan, C SE NW Section 32-31-11w, in the Whelan Pool in Barber County, was drilling at 4,465 feet. No. 1 Whelan, C NW Section 32, discovery well, completed last December, was a 240-bbl. initial producer from Chat at 4,355-4,435 feet. It also produced 180 bbls. of water. No. 2 had Chat at 4,330 feet, with a showing of gas; 250 feet of oil in the hole at 4,347 feet, and 3,000 feet of water in the hole at 4,351 feet. Six-inch casing was set at 4,432 feet, and it was last reported drilling at 4,465 feet.

Dowell, Inc., has brought its traveling laboratory to Kansas, and it will remain in the State several weeks. It is equipped with instruments and apparatus designed to make exhaustive tests of limestone formations from which a large amount of Kansas oil is produced, Dowell, Inc., specializing in acid treatment of oil wells. The laboratory is in charge of William Fry, Dowell research chemist.

Mr. Fry, together with J. A. Cummin, assistant manager; Ross Keyte, geologist, and Ray Austin, who has a practical working knowledge of geology, will engage in a special study of oil field problems as a means of providing greater service in connection with acid treating methods.

Kansas Production

Estimated daily average production of Kansas for the week ended June 15 and for the preceding week follows:

	Barrels	
	June 15	June 8
Burrton	24,125	21,100
Ritz-Canton	7,775	8,125
Hollow	3,825	3,700
Voshell	4,850	4,125
Johnson	1,310	1,240
Nikkell	2,650	2,650
Sedgwick County	8,900	8,625
Ellsworth County	5,185	4,500
Barton County	2,410	1,990
Rice County:		
Chase Pool	15,900	16,665
Remainder	8,100	6,885
Ellis County	420	350
Kingman County	850	790
Stafford County	2,150	1,982
Russell County	12,540	12,370
Greenwood County	11,100	11,000
Butler County	18,100	17,850
Other pools	17,655	18,252
Total Kansas	148,875	142,100

Russell County

Ryan Petroleum Co. completed a failure in No. 1 Newbold, NW SE NE Section 25-12-15w, a wildcat in Russell County. It had Siliceous lime at 3,250 feet, water at 3,265-66 feet, at which depth it was abandoned.

British-American Oil Co.'s No. 1 Boxberger, NE NE NE Section 33-13-14w, made a potential production of 578 bbls. from Siliceous lime at 3,280-90 feet, which had been acidized. It was completed.

The Texas Co.'s No. 1 Boxberger, NE NE SE Section 33-13-14w, was dry and abandoned at 3,331 feet. It had Oswald at 3,010 feet, but no Siliceous was reported. It drilled into quartzite at 3,324½ feet. Acidizing above 3,100 feet failed to bring out any oil.

Central Petroleum Co.'s No. 3 Benso-A, SW NE SW Section 4-14-15w, made a potential production of 845 bbls. a day for three days, also bringing up 200 bbls. of water per day. It produces from Oswald lime at 3,041-69 feet which had been acidized. The well was completed.

Gypsy Oil Co.'s No. 2 Neidenthal, SE NE SE Section 14-14-15w, produced 206 bbls. of oil and 24 bbls. of water in its potential test from Siliceous lime at 3,273-78½ feet, total depth.

Skelly Oil Co.'s No. 1 Gurney, NE NE SW Section 23-14-14w, was good for 442 bbls. of oil potentially, producing from Oswald lime at 2,962-3,000 feet, total depth, which was given an acid treatment. It was completed.

New work in Russell County included Central Petroleum Co.'s No. 1 Ruff, SE SE SW Section 19-12-15w, rigged up; Tom Palmer's No. 1 Machin, SW SW SE Section 9-13-14w, a wildcat, cellar; Buffalo Oil Co.'s No. 6 Schaffer-Anchutz, NW SW SW Section 27-13-14w, building rig; Roth & Faurot's No. 1 Shaffer, NW NW NE Section 31-13-12w, a wildcat, cellar.

Buffalo Oil Co.'s No. 5 Schaffer-Anschutz, SW cor. Section 27-13-14w, had 2,900 feet of oil in the hole from Siliceous lime topped at 3,271 feet, total depth 3,310 feet.

J. J. Hall and others' No. 2 Miller, NE cor. Section 31-14-13w, had Oswald lime at 2,880 feet, total depth 2,960 feet and had 800 feet of oil in the hole.

The Texas Co.'s No. 1 Weidman, NW NW NE Section 15-15-15w, had a hole full of water at 3,160-65 feet and a showing of oil at 3,214-17 feet, total depth.

Sinclair Prairie Oil Co.'s No. 3 Hefferman, NW SW NE Section 26-15-13w, had Siliceous lime and a showing of oil at 3,253-54 feet, total depth.

Barton County

Downing and others' No. 1 Eberhart, SE cor. Section 14-19-11w, Barton County, found Siliceous lime at 3,311 feet and drilled to 3,360 feet. It was acidized but was not tested for some time thereafter. Recently it was given a potential test and produced 163 bbls. in 24 hours, and was completed.

Palmer Oil Corp. has cellar dug for No. 1 Morris, SE NW NE Section 6-19-15w, a wildcat test.

Lario Oil Co. and others' No. 1 Nuss, NW SW SW Section 11-16-14w, which had a hole full of water at 3,393-96 feet, was plugged back to 3,391½ feet and tested 1 bbl. per hour. Oswald was topped at 3,155 feet.

Darby Petroleum Co.'s No. 1 Kultgen, SE NE NW Section 16-16-12w, had Siliceous lime at 3,341½-42 feet, total depth, and the hole filled 1,900 feet with oil in four hours.

Ellsworth County

Lario Oil & Gas Co. and others' No. 1 Central National Bank, SE SE SW Section 33-15-8w, a wildcat in Ellsworth County, was a hole full of water from Siliceous lime at 2,950-62 feet, and was abandoned.

Bradley & Scanlon's No. 2 Nienke, NW cor. Section 13-17-9w, had Siliceous lime at 3,207-09 feet, total depth, and was completed. It had produced 240 bbls. of oil in four hours, and later 1,190 bbls. in 24 hours in its potential test. It was not acidized.

Empire Oil & Refining Co. was moving in material for No. 7 Rolfs, SE NE NE Section 14-17-9w.

Empire Oil & Refining Co.'s No. 4 Rolfs, SE SW NE Section 14-17-9w, had 3,000 feet of oil in the hole from Siliceous lime at 3,170-77 feet. It filled that much in 10 hours.

Trego County

Jenmar Oil Co.'s No. 1 Jones, SE cor. Section 20-12-23w, in Trego County, a wildcat, was abandoned at 4,387 feet. It had Oswald lime at 3,790 feet. It had a core at 3,865-72 feet which showed some saturation, and when tested showed a rainbow of oil and 2 bbls. of water per hour. It was acidized without any increase in oil. Drilling was continued with no further showings recorded to the bottom where the owners had a fishing job.

Ellis County

Helmerich & Payne and others have rig up for a wildcat, No. 1 Kuhn, C NE ¼ Section 16-14-20w, Ellis County.

Rush County

Boyle & Grosman have cellar dug for a test in Rush County, No. 1 Wilson, NE NE NE Section 33-17-19w.

Morgan & Flynn and others' No. 1 Gisick, NW NW SE Section 25-18-16w, had LaMotte sand at 3,508 feet; gauged 2,900,000 feet of gas at 3,518 feet and a small spray of oil and water at 3,530 feet, and was drilling at 3,539 feet.

Schermerhorn Oil Co.'s No. 1 Schroeder, NE cor. Section 36-18-16w, gauged 31,000,000 feet of gas at 3,606 feet, which was killed, and the well was drilling at 3,629 feet.

Rice County

There were six completions in Rice County in the week in review, including the following wells:

Gypsy Oil Co.'s No. 3 F. Steckel, C E half SE NW Section 31-19-10w, Siliceous lime at 3,343 feet, total depth 3,350 feet, with 2,000 feet of water in the hole. Abandoned.

Phillips Petroleum Co. and Indian Territory Illuminating Oil Co.'s No. 2 Krampe, 1,172 feet from the south and 330 feet from west lines of SE ¼ Section 31-19-10w, Siliceous lime at 3,284-88 feet, total depth 3,299 feet, potential produc-

Wildcat Operations in Kansas

Week Ending June 15

(Descriptions are East unless marked otherwise)

BARBER COUNTY

Southern Drlg. Co. et al's No. 1 Davis, 330 ft. from W and 330 ft. from S lines of NE Sec. 13-34-15w.
Drlg. 4,266 ft.

L. H. Wentz' No. 1 Skinner, SE NW NW NE Sec. 29-31-14w.
T.D. 3,041 ft.

BARTON COUNTY

Lario O. & G. Co. and McCoy's No. 1 Dolechek, NE NW NE Sec. 13-16-13w.
Drlg. 2,125 ft.

Lario O. & G. Co. et al's No. 1 Nuss, NW SW SW Sec. 11-16-14w.
Oswald 3,155 ft.; shows of oil 3,341-88 ft.; H.P.W. 3,393 ft.; P.B. to 3,391½ ft.; 1 bbl. oil per hr.

McMorrow & Spencer's No. 1 Hagen, NE cor. Sec. 32-20-11w.
U.R. 5-in. to 3,512 ft.

Palmer Oil Corp.'s No. 1 Morris, SE NW NE Sec. 6-19-15w.
Cellar.

C. L. Price et al's No. 1 Ehrlich, NW SE Sec. 10-16-13w.
Drlg. 1,187 ft.

Pryor & Lockhart's No. 1 Herrington, NE NW Sec. 6-16-12w.
Drlg. 2,450 ft.

Suppes & Witt's No. 1 Hayes, NW cor. Sec. 7-16-15w.
Drlg. 880 ft.

BUTLER COUNTY

Hay & Cameron's No. 1 Johnson, NW NW SE Sec. 16-26-4.
Drlg. 2,320 ft.

Polhamus et al's No. 2 Semisch, C S½ NE NE Sec. 5-28-7.
Drlg. 200 ft.

Sanford et al's No. 1 Cron, SE SE SE Sec. 1-28-4.
S.D. 2,281 ft.

Sinclair Prairie Oil Co.'s No. 1 Moore, SE SW SE Sec. 36-24-3.
Location.

Ward McGinnis' No. 1 Jackson, SW NE Sec. 26-25-5.
Drlg. 750 ft.

Western Kansas O. & R. Co.'s No. 1 King & Marshall, NW NW SW Sec. 11-28-4.
Spudded and S.D.

CHAUTAUQUA COUNTY

Central Oil Co.'s No. 1 Crews, NE NE SW Sec. 8-32-12.
Drlg. 1,600 ft.

CLAY COUNTY

Seidel Bros.' No. 1 Younken, C S½ SE NW Sec. 21-9-4.
Mississippi 1,772-81 ft.; est. 25 bbls. oil and some wtr.; later 5 bbls. oil and 10 bbls. of wtr.; acidized; C.O.

COWLEY COUNTY

Baden, Johnson Roth & Faurot's No. 1 David, NE SW Sec. 35-30-4.
Drlg. 440 ft.

Lloyd, Frost & Study's No. 1 Weathered, SW SE SE Sec. 26-31-3.
Siliceous lime 3,339 ft.; T.D. 3,344 ft.; 3,200 ft. fluid in hole, 50% wtr.

Wakefield's No. 1 Tharp, SE SE NE Sec. 10-32-3.
Rigging up.

Wakefield's No. 1 Tharp, SE SE NE Sec. 10-32-3.
Moving in material.

ELK COUNTY

Griffin & Bell's No. 1 Silger, NE SE SE Sec. 25-30-10.
Lime at 1,314-20 ft.; pumped 36 bbls. of oil in 24 hrs.; completed.

Hicks et al's No. 1 Lewis, SW SE SE Sec. 35-31-10.
S.D. 1,000 ft.

ELLIS COUNTY

Joe Aylward's No. 1 Dreiling, SE SE SE Sec. 3-14-16w.
Rigged up.

Helmerich & Payne et al's No. 1 Kuhn, C NE quarter Sec. 16-14-20w.
Rig.

Tom Palmer and Storm King Oil Co.'s No. 1 Ruder, SE NE NW Sec. 17-15-18w.
S.D. 1,300 ft.

Stanolind O. & G. Co.'s No. 1 Penney-Wann, NW SW SE Sec. 12-15-20w.
Drlg. 2,291 ft.

ELLSWORTH COUNTY

Lario O. & G. Co.'s No. 1 State, SW SW SW Sec. 29-15s-8w.
S.D. 3,937 ft.

Lario O. & G. Co. et al's No. 1 Central National Bank, SE NW Sec. 33-15-8w.
Siliceous lime 2,950-62 ft.; wtr.; abd.

Western Exploration Co.'s No. 1 Wilkins, NW SW NW Sec. 9-17-9w.
Drlg. 2,845 ft.

GRAHAM COUNTY

Helmerich & Payne et al's No. 1 Stites, C SW SW Sec. 8-10-22w.
Rotary rig.

GREENWOOD COUNTY

Foster & Schultz's No. 1 Ferguson, C S½ NE SW Sec. 12-26-13.
Drlg. 1,240 ft.

HARPER COUNTY

Kessler, Thier et al's No. 1 Wolfje, SW SW SE Sec. 17-33-6w.
Moving in material.

HARVEY COUNTY

Cameron, Derby Oil Co. and Trees' No. 1 Brainard, SW SE NW Sec. 19-24-2.
C.O.; T.D. 3,931 ft.

Goering Bros.' No. 1 Brainard, NE SW Sec. 2-23-2w.
Fishing 1,320 ft.

H. H. & S. Oil Co.'s No. 1 Frizzle, NE NE SE Sec. 31-23-3w.
Building rig.

Hartman & Blair et al's No. 1 Redinger, NW cor. Sec. 15-24-3w.
Cellar.

D. R. Lauck et al's No. 1 Baller, SW cor. Sec. 29-24-1.
Drlg. 3,417 ft.

L. W. Prunty et al's No. 1 Davis, NE cor. Sec. 6-22-1w.
Chat 3,922 ft.; drlg. 3,928 ft.

Twin Drlg. Co. et al's (O. J. Connell), No. 1 Ruth, SW cor. Sec. 16-22-2w.
Drlg. 3,475 ft.

Winkler Koch et al's No. 1 Mueller, SE SW NW Sec. 15-23-3w.
Drlg. 2,155 ft.

(Continued on Next Page)

tion 1,561 bbls. in 24 hours.

National Refining Co.'s No. 5 Sherman (a twin), 310 feet from south and 990 feet from east lines of SW ¼ Section 16-19-9w, 3,000,000-foot gasser at 1,992-2,002 feet.

Empire Oil & Refining Co.'s No. 3 Meyers, NE SW SW Section 21-19-9w, Siliceous lime at 3,208-23 feet, total depth, acidized, potential production 1,389 bbls. in 24 hours.

Shell Petroleum Corp.'s No. 2 Tournear, NW NE SE Section 29-19-9w, Siliceous lime at 3,222 feet, total depth 3,241 feet. This well came in in May and made 164 bbls. in seven and one-half hours. Later it was acidized and pumped 516 bbls. in 23 hours. It was drilled to 3,245 feet and swabbed 20 bbls. per hour for four hours.

Gypsy Oil Co.'s No. 11 Christopher, SE SE NE Section 6-20-9w, made a potential production of 898 bbls. of oil in 24 hours, with 14 bbls. of water. It was completed in Siliceous lime at 3,248-54 feet, which had been acidized.

Ramsey Petroleum Co. had cellar dug for No. 1 Gouldner, NW SW NE Section 16-18-9w; National Refining Co., location made for No. 6 Sherman, SW NE SW Section 16-19-9w, and Shell Petroleum Corp., building rig for No. 4 McFarland, NE SE NW Section 7-20-9w.

(Continued on Page 96)

Kansas Wildcats

(Continued from Preceding Page)

KINGMAN COUNTY

Derby et al's No. 1 Bartholomew, SW SW NW Sec. 8-27-4w.
Waiting for csg.; T.D. 143 ft.

Gypsy Oil Co.'s No. 1 Tonn, SW NW SE Sec. 16-25-4w.
Drlg. 1,280 ft.

Sam Jarvis et al's No. 1 Morrisse, C SE NE Sec. 23-30-10w.
Rig.

Kingman Oil Co.'s No. 1 Wetherall, NE NE SW Sec. 20-28-10w.
Drlg. 2,650 ft.

McPHERSON COUNTY

Anderson & Kerr et al's No. 1 Lackey, NE SE NW Sec. 13-21-6w.
Drlg. 1,914 ft.

Bronius et al's No. 1 Hanson, NE NE SW Sec. 15-17-2w.
T.D. 1,108 ft.; S.D.

Carey & Miller's No. 1 Husband, SE SE NW Sec. 6-19-3w.
Moving in material.

Hollow, Toews & Hinkle's No. 1 Aschman, NW NW SE Sec. 8-21-4w.
Moving in material.

Shell Pet. Corp.'s No. 1 Wenger, NE cor. Sec. 2-20-1w.
Viola 3,356-64 ft., T.D.; swbd. 255 bbls. in 10 hrs.; 50% wtr.; acidized; potential production 100 bbls. oil, 620 bbls. of wtr.; P.B. to 3,359 ft.; pumped 80 bbl. of oil and 210 bbls. of wtr. in 7 hrs.; S.D. for pipe line.

J. M. Washabaugh et al's, No. 1-A Berg, SW SW NE Sec. 15-20-3w.
Moving in material.

NESS COUNTY

Philips Pet. Co.'s No. 1 Young, C NW SW Sec. 13-18-21w.
T.D. 4,160 ft.; U.R. 8-in. csg.

OSAGE COUNTY

Jim Edwards' No. 1 Detrick, C NW SE Sec. 21-14-15.
Show oil and gas 783-800 ft.; T.D. 800 ft.

RENO COUNTY

Bradley's No. 1 Olmsted, SW SW SW Sec. 32-22-7w.
Moving in material.

Foraker et al's No. 1 Hiett, SE SW NE Sec. 34-24-4w.
T.D. 1,285 ft.; S.D.

Gypsy Oil Co.'s No. 1 Tonn, SW NW SE Sec. 16-25-4w.
Drlg. 3,806 ft.

Haynes Bros.' No. 1 Mueller, SE SE NW Sec. 30-24-4w.
Drlg. 2,428 ft.

L. A. Mylius et al's No. 1 Sprowl, NE NW NE Sec. 1-24-5w.
Hunton 3,744 ft.; wtr. 3,747 ft.; H.F.W. 3,876 ft.; drlg. 3,916 ft.

RICE COUNTY

Anderson & Kerr's No. 1 Wernet, NW NW NW Sec. 24-20-6w.
R.U. rotary.

Day et al's No. 1 Mason, NW NE NE Sec. 25-21-7w.
S.D. 2,460 ft.

Detrick et al's No. 1 Conner, C NE NE Sec. 25-19-7w.
Cellar.

Detrick et al's No. 1 Monroe, C NE NE Sec. 9-20-7w.
Cellar.

Fred Rust et al's No. 1 Brown, NE cor. Sec. 16-21-6w.
Rigged up.

Vickers Pet. Co. et al's No. 1 Gouldner, SE NE NW Sec. 16-18-9w.
Siliceous lime 3,224-27 ft.; hole full oil; T.D. 3,229 ft.

ROOKS COUNTY

El Dorado Refining Co.'s No. 1 Marshall, C SE SE Section 8-7-17w.
Cellar.

Murfin et al's No. 1 Wasthusin, NE NE SE Sec. 19-9-16w.
Rig.

Smith & Ash's (Carman & Hershey) No. 1 Nelson, NW NW NE Sec. 27-10-16w.
S.D. 132 ft.

Trees Oil Co. and Findeiss' No. 1 Johnson, SW SW SE Sec. 26-10-19w.
Drlg. 1,388 ft.

RUSH COUNTY

Boyle & Grossman's No. 1 Wilson, NE NE NE Sec. 33-17-19w.
Cellar.

P. Boyle et al's No. 1 Yost, C SW SW Sec. 28-17-18w.
U.R. 8-in. csg. to 3,230 ft.

Eldorado Ref. Co.'s No. 1 Stang, SE NW Sec. 36-17-17w.
T.D. 3,280 ft.; C.O.

Lario O. & G. Co. et al's No. 1 Gillig, NE SE NW Sec. 24-17-17w.
Spudding.

Lario O. & G. Co. and Phillips Pet. Co.'s No. 1 Benbow, NW NE NE Sec. 12-17-19w.
T.D. 3,790 ft.; fishing.

Ramsey Pet. Co. et al's No. 1 Darkes, SW SW NW Sec. 5-17-20w.
Drlg. 1,600 ft.

Twin Drlg. Co. et al's No. 1 Appl, SW SW NE Sec. 29-17-17w.
Drlg. 700 ft.

RUSSELL COUNTY

J. Brouk and R. D. Bailey's No. 1 Kleusner, NW SE Sec. 34-15-12w.
Drlg. 770 ft.

Buffalo Oil Co.'s No. 1 Kuns, NE NE SW Sec. 19-14-15w.
Moving in material.

Hartman & Blair's No. 1 Claussen, SE NE SW Sec. 34-12-14w.
T.D. 500 ft.

Hartman & Blair's No. 1 Rexroat, NE NW NW Sec. 31-14-14w.
Spudded.

Hartman & Blair's No. 1 Mills, SE SE SW Sec. 27-1s-15w.
Drlg. 1,470 ft.

Murphin et al's No. 1 Funk, SW cor. Sec. 19-12-13w.
Fishing at 3,040 ft.

Murfin et al's No. 1 Gorham estate, NE NE SE Sec. 29-14-15w.
Cellar.

Nassau Oil Corp.'s No. 1 Karst, NW SW NE Sec. 27-15-14w.
Moving in material.

Tom Palmer's No. 1 Machin, SW SW SE Sec. 9-13-14w.
Cellar.

Pryor and Lockhart's No. 1 Spicer, NE SE Sec. 21-11-15w.
Rigging up.

Reserve Pet. Co.'s No. 1 Moore, NW NW SW Sec. 15-13-12w.
Rigging up.

Roth & Faurot's No. 1 Shaffer, NW NW NE Sec. 31-13-12w.
Cellar.

Ryan Pet. Co.'s No. 1 Newbold, NW SE NE Sec. 25-12-15w.
Siliceous lime 3,250 ft.; 6 bbls. wtr. 3,265-66 ft.; abd.

Stearns & Streeter's No. 1 Dreling, SW SW SW Sec. 8-13-15w.
Location.

Vernon & Murphin's No. 1 Becker, NE cor. Sec. 32-15-14w.
S.D. 2,335 ft.

Wakefield & Armer's No. 1 Hall, NE SE SW Sec. 36-14-15w.
Oswald 2,930 ft.; 1 bbl. oil per hr.; drlg. 3,147 ft.

A. E. Seely et al's No. 1 Herman, SE NW Sec. 27-12-15w.
S.D. 450 ft.

Winkler & Koch's No. 1 Harman, SE SE NW Sec. 27-12-15w.
Drlg. 2,075 ft.

Wolf Creek Oil Co. et al's No. 1 Penn Mutual, SW cor. Sec. 22-15-15w.
Siliceous lime 3,475 ft.; H.F.W. 3,504 ft.

SEDGWICK COUNTY

Allison & Fitzwilliams et al's No. 1 Struthers, NE SW Sec. 34-28-2w.
T.D. 3,295 ft.

Magnolia Pet. Co.'s No. 1 Bartholomew, SE SE SW Sec. 30-27-4w.
Chat 3,682 ft.; 9-in. 3,692 ft.; standardising.

SCOTT COUNTY

Atlantic Oil Prod. Co.'s No. 1 Mark "A," C SE SE Sec. 28-20-33w.
Drlg. 4,960 ft.

STAFFORD COUNTY

C. B. Davis et al's No. 1 Riley, SE cor. Sec. 19-22-11w.
Siliceous lime 3,589--93 ft., T.D.; show of oil; will standardize.

Empire O. & R. Co.'s No. 1 Grove, NE NE NW Sec. 5-22-11w.
Drlg. 1635 ft.

Heimerich & Payne's No. 1 Geisler, NW NW SE Sec. 28-22-12w.
Drlg. 3,500 ft.

SUMNER COUNTY

Allison & Fitzwilliams et al's No. 1-B Hitchcock, SE NW Sec. 16-30-1w.
Drlg. 1,330 ft.

Kessler & Their et al's No. 1 Wolfje, SW SW NE Sec. 17-32-6w.
Rig.

D. J. Wilson et al's No. 1 Clark, 1,320 ft from W and 25 ft. from S line of NW Sec. 15-35-1w.
S.D. 1,000 ft.

TREGO COUNTY

Central Commercial's No. 1 Wagg, NW NW SE Sec. 17-13-21w.
T.D. 1,600 ft.; S.D.

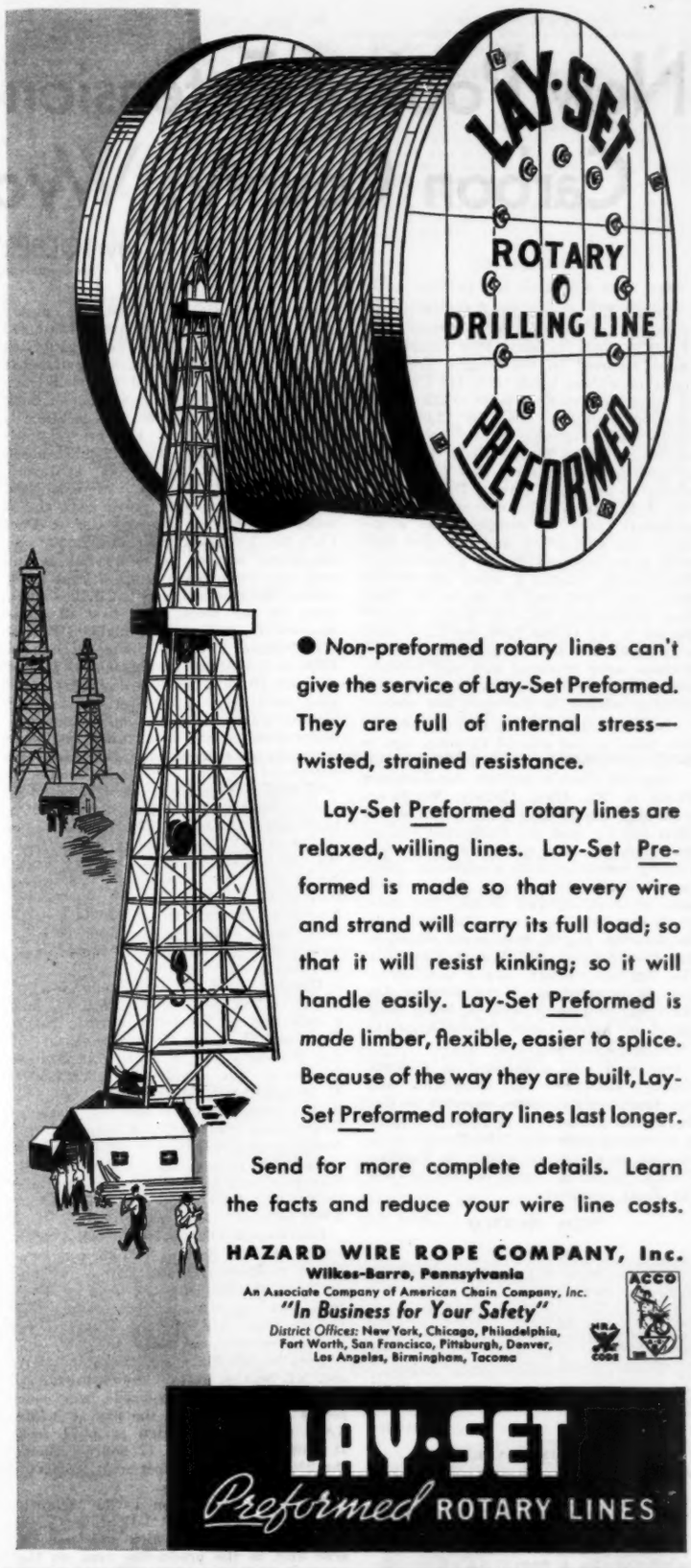
Hansa & Lauck and Olson Drlg. Co.'s No. 1 Lang, SE SE NW Sec. 1-14-21w.
Drlg. 1,421 ft.

Jenmar Oil Co.'s No. 1 Jones, SE cor. Sec. 20-12-23w.
Dry and abd. 4,387 ft.

NEBRASKA

SAUNDERS COUNTY

Midland Oil Co. and Murfin's No. 1 Forster, S half NE Sec. 5-16-8e.
Drlg. 1,100 ft.



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New Pool or Extension in Eunice Area, N. M.; Carbon County, Wyoming, Holding Interest

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., June 17.—Pipe line runs in Lea County, New Mexico, were 1,569,392 bbls. in May. Five completions were reported in the Eunice area, the most important being Ohio Oil Co.'s No. 3 State-McDonald, 4 miles south of production, estimated good for 12,000 bbls. daily initial, opening a new pool or an extension of the Eunice Field. The other completions added some new proven territory to the pool. Rowan Drilling Co.'s No. 1 Elliott, 3 miles east of the Ohio's discovery, may be completed as a gas well. One completion and one new location were reported in the Cooper Pool. The Carter wildcat 6 miles east of the pool, has 1,000 feet of oil in the hole. One completion, No. 1-B Moon, was reported in the Hobbs Pool, for 7,286 bbls. and 13,400,000 feet of gas, two new locations were reported and one location abandoned. Argo Royalty Co. will drill another wildcat in the west Lea area.

Colorado reported one well abandoned, this being a test started 11 years ago in which the hole was lost below 6,000 feet.

Yale Oil Corp.'s test on the Bonanza Dome in Big Horn County, Wyoming, was abandoned. The joint discovery of Ohio Oil Co. and the California Co. on the Medicine Bow structure, in Carbon County, continues to be a sensation, making 81,000,000 feet of gas, 500 to 1,000 bbls. of distillate and flowing 265 bbls. of 63 gravity oil an hour. The California Exploration Co. is starting an offset to its discovery on the Waugh Dome in Hot Springs County, and a new operation is reported on Kirby Creek. Another big Sundance well is being completed in Lance Creek in the Argo Oil Co.'s No. 3 Elliott.

One well was abandoned in Cascade County, Montana; one completion and two new locations were reported in Cut Bank; and a discovery in Liberty County is attracting attention. The Texas Co. is starting an important wildcat in Pondera County, 5 miles south of the nearest Cut Bank producer.

NEW MEXICO

Lea County

Pipe line runs of Lea County pools in May were as follows:

Field—	Bbls.
Hobbs	957,351
Cooper-Lynn	191,480
Eunice	247,784
Jal	131,252
Lea	40,915
North Lea	610
Total	1,569,392

MONUMENT AREA

Jeffers Oil Co.'s No. 1 Britt, C SE NW Sec. 7-20-37.
Cellar and pits dug; bldg. road.
Shell Pet. Corp.'s No. 1-E State, C SE SE Sec. 35-19-36.
Drlg. 2,660 ft. in lime; gas shows at 3,280-21, 3,345-65 and 3,384-3,400 ft.
Sun Oil Co.'s No. 1 Weir, C NE SE Sec. 35-19-36.
Rig.
Superior Oil Co.'s No. 1 State, C NE NE Sec. 2-20-36.
Spud. May 29, set 13⅜-in. at 170 ft. with 110 sacks.; drlg. 1,015 ft. in anhydrite.
Texas Co.'s No. 1 Saunders, C SE SW Sec. 19-19-37.
Drlg. 3,100 ft. in anhydrite and lime; drill stem tept at 2,940-2,980 ft. showed 50,000 ft. gas.

Eunice Area

Five completions were reported in the Eunice area, one of which is of major importance and marks either the opening of a new pool or a 4-mile extension of the Eunice Pool. This completion is the Ohio Oil Co.'s No. 3 State-McDonald, C NE SW Section 16-22-36, which was given a potential of 12,000 bbls. a day open flow, based on short tests. It topped the lime pay at 3,785 feet and was drilled to 3,816 feet. There was a big increase in oil at 3,814 feet and the well came in flowing 248 bbls. an hour under a back pressure of 400 pounds. The location is 4 miles southeast of the nearest producer in the Eunice Pool; 2 miles north of Continental Oil Co.'s No. 1 Meyers, in Section 28-22-36, which was completed as a gas well several years ago; and 3 miles southeast of Empire Gas & Fuel Co.'s No. 1 Closson, Section 6-22-36, also completed several years ago as a gas well. The Ohio company has a large block around the new well and has drilled three tests on the block. The first of these was its No. 1 State-McDonald, SW NW SW Section 15-22-36, completed late in 1930 at 3,878 feet for 24,000,000 feet of gas and 10 bbls. of oil a day after plugging back from 3,904 feet to shut off sulphur water. No additional drilling was undertaken on the block until last year when it went a mile to the west and completed its No. 2 State-McDonald, C NW SW Section 14-22-36, at 3,850 feet for 27,000,000 feet of gas after plugging back from 4,350 feet. Three months ago this well was reported making oil, flowing 100 bbls. daily of 36.8 gravity crude. No. 3 State-McDonald was staked three-fourths of a mile to the west of No. 2. The three State-McDonald wells are the only wells drilled in an area 6 miles square with gas wells on the south, north and northwest.

Humble Oil & Refining Co.'s No. 3-B State, C NW SE Section 29-21-36, half a mile east of Peerless Oil Co.'s No. 1 State and the same distance southeast of the Humble's No. 2 State, the nearest producers, was completed at 3,919 feet. It flowed 1,800 bbls. through the 2½-inch tubing at 3,914 feet on a three-fourths-inch choke the first 24 hours after treating with 1,000 gallons of acid. It extends the proven area on the east side. The pay was at 3,913-19 feet and the elevation is 3,630 feet. The 7-inch is at 3,869 feet.

Continental Oil Co.'s No. 9-B-3 Meyers, C SE NW Section 9-21-36, was completed at 3,858 feet and flowed 71 bbls. an hour through the 2½-inch at 3,843 feet. The pay was at 3,833-58 feet and the elevation is 3,606 feet. It proves up one unit on the east side.

Repollo Oil Co.'s No. 2 Adkins, SW cor. NE Section 9-21-36, which proves up one location on the east side, was completed at 3,880 feet in the pay at 3,790-3,880 feet. The elevation is 3,571 feet. It flowed 197 bbls. in 17 hours through the 2½-inch at 3,872 feet with 2,500,000 feet of gas.

The other completion is the Atlantic Oil Producing Co.'s No. 1-E State, C NE SW Section 5-21-36, which adds one 40-acre unit to the productive area on the north end. It was drilled to 3,897 feet and flowed 26 bbls. an hour through the 2½-inch at 3,888 feet with 350,000 feet of gas from the pay at 3,890-97 feet. The elevation is 3,578 feet.

An important wildcat in this area is Rowan Drilling Co.'s No. 1 Elliott, C NE SW Section 17-22-37, 3 miles east of Ohio Oil Co.'s No. 3 State-McDonald. It was drilled to 4,075½ feet where it has sulphur water with oil and gas shows. It plugged back to 3,760 feet in an attempt to complete it as a gas well and is waiting on cement.

Amerada Pet. Corp.'s No. 1 Houston, C SE NE Sec. 7-21-36.
Drlg. 3,154 ft. in lime; drill stem test at 3,644-84 ft. showed 362,200 ft. of gas in 30 minutes. Oil show at 3,596-3,607 ft.
Atlantic Oil Prod. Co.'s No. 2-C State, C SE SE Sec. 5-21-36.
Location.
Atlantic Oil Prod. Co.'s No. 1-G State, C SE SW Sec. 5-21-36.
Rigging rotary at 81 ft.
Continental Oil Co.'s No. 20-C-5 State, C SW SW Sec. 20-21-36.
Drlg. 3,520 ft. in lime; gas show 3,310-25 ft.
Continental Oil Co.'s No. 9-B4 Meyers, C NE NW Sec. 9-21-36.
Drlg. 1,775 ft. in salt; 7⅝-in. at 1,606 ft. with 400 sacks.
Continental Oil Co.'s No. 30-A-2 Lockhart, C NE NE Sec. 30-21-36.
T.D. 3,850 ft. in lime; 5½-in. at 3,802 ft. with 400 sacks, W.O.C.
Empire G. & F. Co.'s No. 1-C State, NW NW SW Sec. 16-21-36.
Running 9⅝-in. at 1,735 ft. in salt.
General Crude Oil Co.'s No. 1-D State, C NW SW Sec. 32-21-36.
S.D. 70 ft.
Humble O. & R. Co.'s No. 4-B State, C NW NE Sec. 29-21-36.
Rigging up rotary.
Rowan Drlg. Co.'s No. 1 Elliott, C NE SW Sec. 17-22-37.
P.B. from 4,075 ft. to 3,760 ft. W.O.C.
Shell Pet. Corp.'s No. 1-A State, C SE NE Sec. 12-21-35.
T.D. 4,404 ft.; P.B. to 3,926 ft.; rigging up machine to C.O.
Skelly Oil Co.'s No. 3-B State, C NE NW Sec. 16-21-36.
Drlg. 2,140 ft. in lime; gas shows at 2,951-60, 2,995-3,022, and 3,026-49 ft.

Cooper Area

One completion, one new location and a wildcat 6 miles east of production showing oil were reported in the Cooper area. The completion is the Continental Oil Co.'s No. 26-A-1 Gates, C SW SW Section 26-24-36, an inside location. It was drilled to 3,470 feet and flowed 34 bbls. an hour through the 2½-inch at 3,465 feet, with 857,000 feet of gas from the pay at 3,460-70 feet. The elevation is 3,315 feet. The new location is Skelly Oil Co.'s No. 1 Coats, C SE SW Section 3-24-36, at the extreme north end of the pool and a diagonal offset on the northwest to Humble Oil & Refining Co.'s No. 1 Coats, a completion last week which extended the pool more than a mile to the north.

The wildcat attracting attention is the Amos G. Carter and others' No. 1 Mattix, C SE NW Section 3-24-37, 6 miles to the east and north of the pool. It had 1,000 feet of oil in the hole from lime at 3,508-10 feet and 3,570-74 feet. It drilled to 3,586 feet and then cemented the 7-inch at 3,407 feet with 400 sacks and is waiting. The oil is 38.7 gravity.

Amerada Pet. Corp.'s No. 2 Isbell, C NE NE Sec. 15-24-36.
Drlg. 3,594 ft. in lime; gas show at 3,125 ft.
Amerada Pet. Corp.'s No. 3 Everett, C NE SE Sec. 24-24-36.
Spud. May 30; set 12½-in. at 166 ft. with 80 sacks; drlg. 380 ft. in red beds.
Amos G. Carter et al's No. 1 Mattix, C SE NW Sec. 3-24-37.
T.D. 3,586 ft. in lime, 1,000 ft. oil in hole; 7-in. at 3,407 ft., 400 sacks; W.O.C.
Continental Oil Co.'s No. 14-A-4 Vaughn, C NW NW Sec. 14-24-36.
Location.
Continental Oil Co.'s No. 27-A-1 Gates, C SE SE Sec. 27-24-36.
Location.
Continental Oil Co.'s No. 14-A-3 Vaughn, C SW NW Sec. 14-24-36.
Spud. June 1, set 10¾-in. at 236 ft., 200 sacks.
Continental Oil Co.'s No. 15-A-3 Vaughn, C NE SE Sec. 15-24-36.
Spud. June 3; Set 10¾-in. at 277 ft., 100 sacks; W.O.C.
Continental Oil Co.'s No. 15-A-2 Vaughn, C SW SE Sec. 15-24-36.
Location.
Continental Oil Co.'s No. 23-A-2 Gates, C NW NW Sec. 23-24-36.
Rig.
Empire G. & F. Co.'s No. 4 Everett, C SW SW Sec. 35-24-36.
Cmtd. 7-in. on bottom at 3,366 ft. with 100 sacks, W.O.C.
Humble O. & R. Co.'s No. 2 Coats, SWL NW NE Sec. 10-24-36.
S.D. 3,394 ft.
Humble O. & R. Co.'s No. 1 Thomas, C SW SE Sec. 23-24-36.
T.D. 3,470 ft.; rigging to run 7-in. and recomplete as an oil well.
Simms Oil Co.'s No. 1 Woolworth, C SE NE Sec. 35-24-36.
S.D.O. at 3,476 ft., est. 10,000,000 ft. of gas and show of sulphur water.
Skelly Oil Co.'s No. 1 Coats, C SE NW Sec. 3-24-36.
Digging cellar and pits.
Stanolind O. & G. Co.'s No. 4-A Meyers, C NE NW Sec. 22-24-36.
T.D. 3,605 ft.; P.B. to 3,537 ft.; swabbed 40 bbls. in 1 hr. 90 per cent water.
Texas Co.'s No. 3-B Ogg, C NE NE Sec. 34-24-36.
Coring 3,316 ft. in lime.
Tide Water Oil Co.'s No. 1 Woolworth, C SW SE Sec. 26-24-36.
Bldg. rig.

Jal Area

There were no completions or new locations in the Jal area.

Amerada Pet. Corp.'s No. 1 Dyer, C SW NE Sec. 31-25-37.
Drlg. 3,278 ft. in lime; gas show at 2,970-72 ft.
Byrd-Frost, Inc.'s No. 1-A Wells, SE SE NW Sec. 12-25-36.
S.D. 3,310 ft. for tuping; flowed open 42 bbls. per day; will acidize.
Byrd-Frost, Inc.'s No. 2-A Wells, SW SW SE Sec. 12-25-36.
Location.
Empire G. & F. Co.'s No. 2 Dyer, NW NW SE Sec. 31-25-37.
T.D. 3,285 ft. in lime; swabbed average of 2 bbls. per hr., 50 per cent water.
E. B. Guess' No. 1-B Justis, SW NW NW Sec. 20-25-37.
S.D. 1,060 ft. in red beds.
Gypsy Oil Co.'s No. 1-B Arnott, NW SW SW Sec. 32-25-37.
T.D. 3,240 ft. in lime; treated 2,000 gals.; swabbed 71 bbls. oil and 77 bbls. water in 27 hrs.; retreated with 2,000 gals., swabbed 145 bbls., 50 per cent water, in 3 hrs. testing.
Gypsy Oil Co.'s No. 1 Arnott, C NE NW Sec. 2-25-36.
T.D. 3,465 ft. in lime; treated 1,000 gas., W.O.A. Tested dry at 3,450 ft.
Gypsy Oil Co.'s No. 2 Arnott, C NW NE Sec. 2-25-36.
Coring at 3,528 ft.; drill stem test at 3,414 ft.; showed 50 bbls. per hr.
Gypsy Oil Co.'s No. 3 Arnott, C NW NW Sec. 2-25-36.
T.D. 3,366 ft.; 7-in. at 3,358 ft. with 400 sacks; W.O.C.
Gypsy Oil Co.'s No. 1-A Vinson Ramsey, C SE SE Sec. 12-26-36.
T.D. 355 ft. in red beds; 13⅜-in. at 317 ft., 250 sacks; W.O.C.
R. H. Henderson et al's No. 1 Langile, C SE SE Sec. 8-25-37.
T.D. 2,875 ft.; drlg. by at 2,497 ft.
R. H. Henderson et al's No. 1 Ogg, C NW NE Sec. 11-25-36.
S.D. 5 ft.
Jeffers Oil Co.'s No. 1 Carlson, C NW SE Sec. 27-25-37.
S.D. 390 ft. in lime.
Tide Water Oil Co.'s No. 1 Coats, SE SE NW Sec. 31-25-37.
T.D. 3,332 ft.; reaming; drill stem test at 3,190-3,332 ft. showed 360 ft. of mud and 900 ft. of oil; at 3,190-3,296 ft., 180 ft. of mud and 100,000 ft. of gas.

Hobbs Area

One completion, two new locations and one location abandoned were reported in the Hobbs Pool. The Samedan Oil Co.'s No. 1-B Moon (formerly J. P. Cusacks, Inc.), SW SE NE Section 28-18-38, which adds one-fourth of a mile to the productive area on the east flank, was completed at 4,216 feet for 7,286 bbls. of oil and 13,400,000 feet of gas, open flow, after acidizing twice with 6,000 gallons each. The pay was at 4,157-4,216 feet and the elevation is 3,640 feet.

One of the new locations is Continental Oil Co.'s No. 4 Grimes, SW NE SE Section 28-18-38, a south offset to No. 1-B Moon. It is digging pits. The other is Shell Petroleum Corp.'s No. 1 Berry, NE SW SE Section 31-18-38. It is in the district on the southwest flank where wells are making water with the oil. The location abandoned is Noble & Co.'s No. 4-C State, near C SW Section 24-18-37, on the northwest edge close to the water line.

The Samedan Oil Co. has taken over the properties and wells drilled by Noble

& Co., the Capitan Oil Co. and J. P. Cusack, Inc. These include No. 1 Moon, No. 1-B Moon, No. 1-C State, No. 2-C State and No. 3-C State and Nos. 1 and 2 Turner.

Continental Oil Co.'s No. 4 Grimes, SW NE SE Sec. 28-18-38.
Digging cellar and pits.
Continental Oil Co.'s No. 13-B-1 State, C SE SW Sec. 13-18-37.
Drlg. 3,615 ft.; oil show 3,247-54 ft.
Samedan Oil Co.'s No. 2 Moon, 1,315 ft. S of N line and 2,310 ft. W of E line, Sec. 28-18-38.
Spud. June 2; running 12½-in. at 235 ft.
Samedan Oil Co.'s No. 1 Byers, 666 ft. from N line and 2,310 ft. from E line, Sec. 3-19-38.
T.D. 3,470 ft.; lost bit; pigd. back to 3,370 ft.; W.O.C.
Gypsy Oil Co.'s No. 4 Graham-State, C NW NE Sec. 24-18-37.
T.D. 4,230 ft.; fshg. for tubing after fire.
National Securities Oil Co.'s No. 1 Linam, NE SE SW Sec. 33-18-37.
T.D. 4,506 ft.; P.B. to 4,238 ft.; S.D.O.
Shell Pet. Corp.'s No. 1 Nora Berry, 1,325 ft. W of E line and 1,315 ft. N of S line, Sec. 31-18-38.
Digging cellar and pits.
Shell Pet. Corp.'s No. 3 Sanger, SW NW SW Sec. 27-18-37.
T.D. 4,217 ft. in lime; 7-in. at 4,075 ft., 200 sacks; oil show 4,147-65 ft.
Stanolind O. & G. Co.'s No. 26 Byers, C SE NE Sec. 3-19-38.
T.D. 4,112 ft. in lime; drlg. plug; 7-in. at 4,110 ft., 150 sacks.

Lea Area

One new location was reported in the Lea area in the Argo Royalty Co.'s No. 2 Burner, C SE SE Section 8-20-32, 2 miles southeast of its No. 1 Burner, SW NE NE Section 6-20-32, which was abandoned last March at 2,810 feet with a hole full of sulphur water.

Texas Co.'s No. 1 Cole, C NE NE Sec. 35-19-33.
S.D. 3,832 ft. in lime.
Anderson & Pritchard's No. 1 Fisher, C SE NE Sec. 8-20-35.
Drlg. 4,025 ft. in lime.
Argo Royalty Co.'s No. 2 Burner, C SE SE Sec. 8-20-32.
Location.
Jeffers Oil Co.'s No. 1 Jiminez, C SW SE Sec. 12-20-33.
S.D. 1,560 ft.; 8¼-in. at 1,505 ft. with 50 sacks; T.A. 1,395 ft.; elevation 3,603 ft.
Jeffers Oil Co.'s No. 1 Etz, C NE SW Sec. 12-21-32.
Drlg. 2,745 ft. in salt.

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CAPROCK AREA

Vierson & Brown's No. 1 Robinson, C NW SE Sec. 14-11s-32.
Standing; rig completed.

Maljamar Area

Maljamar Oil & Gas Co.'s No. 1 Pearl Miller, C NW SW Section 23-17-32, which extends the Maljamar Pool 1 mile to the southeast, was deepened to 4,195 feet and picked up a little sulphur water, 5 bailers per day. It plugged back to 4,190 feet and shut off the water and is testing. It swabbed 90 bbls. daily at 4,110 feet.

BERNALILLO COUNTY

Norins Realty Co., Inc.'s No. 1 Gallegas grant, C NW NW Sec. 19-11n-4e.
Drlg. at 500 ft.

CHAVES COUNTY

Los Chaves Dev. Co.'s No. 1 Government, C NE Sec. 8-8s-23.
Drlg. below 500 ft.
Warman Oil Trust's No. 1 Weldon & Hoard, NW NW SE Sec. 9-14-25.
T.D. 1,660 ft.; recemtg. 5¾-in. at 1,425 ft.

CURRY COUNTY

George Schoonmaker et al's No. 1 Hart, C SE SE Sec. 13-2n-32.
S.D. at 55 ft.

EDDY COUNTY

Barnsdall Oil Corp.'s No. 2 Dodd, C NE SE Sec. 22-17-29.
S.D. 2,709 ft. for repairs; oil show at 2,680-90 ft., 1,600 ft. of oil in hole in 16 hrs.; est. at 50 bbls.
R. D. Compton et al's No. 6 Mann, NW SW NE Sec. 4-18-27.
Drlg. 752 ft. in red beds.
Dooley & Shank's No. 1 McClay, C NE SE Sec. 33-18-30.
Drlg. 840 ft.; 10-in. 480 ft. with 50 sacks; H.F.W. at 840 ft.
Dooley et al's No. 1 Commerce Trust, NW NE SW Sec. 8-20-27.
Drlg. 570 ft. in gray lime.
Flynn, Welch & Yates' No. 1 Yates, C SE NE Sec. 6-20-27.
Drlg. 1,030 ft. in lime; oil show 911 ft.; oil and gas show 1,012-20 ft.; 3 bailers of sulphur water per day at 936-943 ft.
Getty Oil Co.'s No. 7 Dooley, SW SW NW Sec. 24-20-29.
Coring at 5,483 ft. in gray sand and black shale; oil show at 5,302-19 ft.; drill stem test at 5,300-25 ft.; no results.
R. G. Pattillo's No. 1 Thomason, SE SE NE Sec. 12-20-28.
Drlg. 385 ft. in red beds.
Rampo Oil Co.'s No. 1 State, CNL NE SE Sec. 32-17-28.
Drlg. 2,098 ft. in anhydrite and lime.
Red Lake Oil Co.'s No. 4 State, NW NW SW Sec. 22-17-28.
T.D. 2,950 ft.; est. at 20 bbls. per day after shot.
Premier Pet. Corp.'s No. 1-E Dexter, C NW NE Sec. 20-17-30.
T.D. 3,239 ft. in lime, 2,500 ft. of oil in hole from 3,156-65 ft.; C.O.
Tignor, Etz & Keyes' No. 2 Keyes, C NE SW Sec. 10-17-28.
Moving in material.

GUADALUPE COUNTY

Anton Chico Dev. Co., Ltd.'s No. 2 fee, NW NE SW Sec. 20-9n-17.
S.D. 900 ft.

McKINLEY COUNTY

Bennett & Lingfelter's No. 1 Lark Drlg. Co., NE NE NW Sec. 29-20-9w.
S.D. 560 ft. in sand; est. 20 bbls. daily at 469-72 and 554-60 ft.
A. C. Kittel's No. 1, NW NW Sec. 32-20-9w.
Material on ground.
R. W. Sanderson et al's No. 1, NE SW Sec. 21-20-9w.
Material on ground.
David K. Stacey's No. 2 Webber, SW NW Sec. 29-20-9w.
Rig on ground.

OTERO COUNTY

Flynn, Welch & Yates' No. 1 Donahue, C NW NE Sec. 28-24-15.
S.D. 1,585 ft. in lime for repairs.

QUAY COUNTY

Quay County Dev. Co.'s No. 1, C SE SW Sec. 19-9n-33e.
Drlg. 450 ft.
H. F. Wilcox Oil & Gas Co.'s No. 1 Gurley, SE SW SE Sec. 32-7n-32.
S.D. 500 ft.

RIO ARRIBA COUNTY

El Vado Structure Properties Co., Ltd.'s No. 1 Tierra Amarilla grant, NE (unsurveyed) Sec. 26-3s-1e.
Drlg. below 1,000 ft.

ROOSEVELT COUNTY

Claudell Dev. Co.'s No. 1 Wilmes, C SW SE Sec. 21-2s-30.
T.D. 3,667 ft.; resuming; will pull 5-in. and test shows in upper horizons.
K. M. Hancock et al's No. 1, 33 ft. from W line and 1,000 ft. from N line, Sec. 21-1n-37.
Moving in rotary equip.; derrick up.

SANDOVAL COUNTY

Continental Oil Co.'s No. 1 L-Bar Cattle Co., 630 ft. N of E quarter cor. Sec. 2-13n-4w.
Drlg. water well and bldg. road.

SAN JUAN COUNTY

Aztec Coop. Oil Co.'s No. 1 Aztec, SE SW Sec. 10-30n-11w.
Material on ground.
J. F. Cross et al's No. 1 Wilson, SW SW SE Sec. 17-30-11w.
S.D. 510 ft.
J. F. Cross' No. 6 Duggan, NE NE NE Sec. 20-29-11w.
S.D. 647 ft.
Cross & Peole's No. 1 Aztec, Sec. 1-30-11w.
Making water shutoff at 740 ft.
A. E. Haney's No. 1 Hare, SE SE Sec. 14-29-11w.
Drlg. 680 ft.
Kutz Canon O. & G. Co.'s No. 1 Day, SW SW SW Sec. 20-28-10.
Drlg. 4,370 ft. in sandy shale and shells and showing some increase in oil and gas. Preparing to unload 4,000 ft. of water and test.
R. C. Oswell's No. 4 Government, SW NW NE Sec. 34-30-11w.
S.D. 1,790 ft.
R. C. Oswell's No. 6 Government, SE NE Sec. 33-30-11w.
Spudded and S.D.
Reserve Oil Co.'s No. 6 Shaffer, SE NE SE Sec. 36-22n-14w.
Location.
San Juan Pet. Co.'s No. 1 Lemley, NE SE SE Sec. 32-30-11w.
S.D. 1,314 ft.
Nick Spatter's No. 1 fee, C NE SW Sec. 32-31-11w.
S.D. 1,480 ft. for pipe.
H. C. Stratton's No. 1 Hart, SW NE SE Sec. 25-30-12w.
Abd. at 1,680 ft.

SAN MIGUEL COUNTY

Cabra Springs O. & G. Co.'s No. 1 Thompson, SW NE NE Sec. 22-12n-22e.
U.R. 6⅝-in. to bottom at 3,920 ft. for water shutoff.
Cabra Springs O. & G. Co.'s No. 2 West Pino Mesa, SW SW SW Sec. 31-12-22.
S.D. 312 ft.
Pioneer Oil Co.'s No. 2 Montezuma, CSL SE SW Sec. 14-15n-16.
Drlg. 300 ft.
Starr-Kennedy Oil Co.'s No. 3 Adams, NE NE NE Sec. 25-17-16.
Stdg. at 5,090 ft. after completing rig to resume following fire.

SANTA FE COUNTY

Elmer Fisher's No. 1 Hill, NE SW Sec. 6-10-7e.
S.D. 2,750 ft. in schist.
Holmberg Interests' No. 1 Cantwell, NW NW NW Sec. 5-10n-9e.
Drlg. 2,570 ft.
Kelsey Clients Dev. Est.'s No. 2 State, C NW Sec. 22-10n-10e.
S.D. 1,450 ft.

TORRANCE COUNTY

48 Pet. Co.'s No. 1 Greenfield, C NW SW Sec. 17-9n-8e.
Drlg. 350 ft. shale and shells; 10-in. at 300 ft.

UNION COUNTY

Sierra Grande Oil Corp.'s No. 1 Rogers, C NE SW Sec. 4-29-29.
Drlg. 2,300 ft. in arkose.

VALENCIA COUNTY

Pres-Sel Dev. Co.'s No. 1 Morris, NE SE Sec. 30-12n-10w.
Drlg. 600 ft.
Ringle Dev. Co.'s No. 2 Tome grant, C NE SE Sec. 20-6n-3e.
Rigged and S.D.
Ringle Dev. Co.'s No. 1 Tome grant, C SE SE Sec. 36-6n-3e.
S.D. 400 ft.
Western Natural Resources Corp., Inc.'s No. 2 San Clemente, SE SE NW Sec. 5-6n-1e.
S.D. 6,001 ft.

COLORADO

One well, an old operation shut down for more than a year, was abandoned in Colorado in the McDeb Drilling Co.'s No. 1 Fitzsimmons, C S half NE Section 7-4s-66, in Arapahoe County south of the Fitzsimmons General Hospital. It reached a depth of 6,128 feet early in 1933, at which depth it had 50 feet of oil and a show of gas in the hole. The 4¾-inch parted and 3,200 feet dropped. Efforts made at intervals to clear the hole were unavailing. The 10-inch is now being pulled. The derrick burned down about a year ago, the second fire to destroy the rig. It spudded early in 1926 and had several shows of oil, the best being at 2,880 feet. At around 5,700 feet, supposedly in the Hygiene, it had another good show. The company is holding a meeting this week to consider ways and means of moving in a rotary and drilling another test.

Trading in royalties in eastern Colorado is showing a pronounced increase. This undoubtedly is due to the investiga-

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tions and leasing being made in that area by several of the major companies.

ADAMS COUNTY

Riddle Pet. Co.'s No. 1 Baxter, C SW Sec. 2-3s-66w.
Standing partially rigged and drlg. wtr. well.

ARCHULETA COUNTY

Oil City Pet. Co.'s No. 1-A Garnett, NW NE SW Sec. 25-33n-2e.
T.D. 1,098 ft.; U.R. 6¼-in. to bottom.
Navajo Oil Co.'s No. 1 Crowley, SW SW NE Sec. 11-32n-1e.
S.D. 537 ft.

BACA COUNTY

J. H. Everett et al's No. 1, 330 ft. NW cor. Sec. 24-32-48.
Drlg. wtr. well and moving in rotary equipment.

BOULDER COUNTY

Leslie R. Steele et al's No. 1 Maxwell, SW NE NW Sec. 24-1n-71.
Drlg. 982 ft.

GRAND COUNTY

Colorado Oil Ref. Co.'s No. 1 Linke, NE SW SW Sec. 13-1n-77w.
S.D. 1,900 ft. to repair equipment.
Interstate O. & R. Co.'s No. 1 Hinman, NE SE NW Sec. 11-2n-81.
Resuming at 1,997 ft.; will C.O., cement off caves and drill deeper.

HUERFANO COUNTY

S. W. Pressey's No. 1 Ojo, SW NE Sec. 10-29-69.
S.D. 2,550 ft.

JACKSON COUNTY

Colorado Oil Ref. Co.'s No. 1 North Park Coal, NW NW Sec. 18-9n-78.
T.D. 1,805 ft.; U.R. 15½-in. to set at 500 ft.
Continental Oil Co.'s No. 3 Hoye, NW NW NE Sec. 34-9n-78.
T.D. 2,490 ft.; P.B. to 2,330 ft.; drlg. and reaming at 2,489 ft.

JEFFERSON COUNTY

Ruby Hill O. & G. Co.'s No. 1 Braden, SE cor. Sec. 24-4s-69.
S.D. 4,280 ft.

LAS ANIMAS COUNTY

Mountain States Oil Corp.'s No. 1 Nickola, C NE SE Sec. 10-34-62.
S.D. 1,640 ft.

LINCOLN COUNTY

Consolidated Smelting & Metals Co.'s No. 1 Hancock, NE NE SW Sec. 7-17s-52.
T.D. 1,190 ft.; C.O.

MOFFAT COUNTY

Stanolind O. & G. Co.'s No. 5-S Parkinson, NW cor. SE Sec. 22-4n-92.
Pouring derrick foundations.
Stanolind O. & G. Co.'s No. 16-SD Shaw, SE NW NW Sec. 27-4n-92.
Top Sundance, 3,354 ft.; cmtd. 8¼-in. at 3,361 ft., W.O.C.
Texas Co.'s No. 2 Iles Investment, 620 ft. S of N line and 220 ft. E of W line, Lot 4, Sec. 23-4n-92.
Rigging rotary tools.
Mountain Fuel Supply Co.'s No. 1 Murdock, SE SE NE Sec. 24-12n-101.
Some materials on location.

MONTEZUMA COUNTY

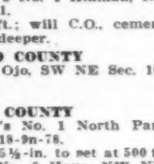
McElmo Oil Co.'s No. 1 West, NE NW NE Sec. 31-36n-17w.
S.D. 3,121 ft. with 1,200 ft. oil in hole.

MORGAN COUNTY

Swisher et al's No. 1 Lunt, 92 ft. W of E line and 360 ft. N of S line, Sec. 3-4n-60.
Drlg. shale 250 ft.

PARK COUNTY

South Park Oil Co.'s No. 1 State, SE SE SW Sec. 16-11s-75.
T.D. 1,415 ft.; fighting cave and trying to land 10-in. on bottom.



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PROWERS COUNTY

Trojan O. & G. Co.'s No. 1 Lotus Oil, NW NE NE Sec. 15-23-46.
T.D. 5,227 ft.; drilled out plug to bottom after cmtng. off caves.

WYOMING

Big Horn County

One well was abandoned in Big Horn County in the Yale Oil Corp.'s No. 1 Blakesley, NE NW Section 28-49-91, Bonanza district. It spudded a year ago to go to around 1,200 feet, but was drilled to 1,705 feet where it had a hole full of water and was plugged and abandoned. In the early development of Wyoming pools the Bonanza anticline was tested in about seven wells, all of which went only to shallow horizons.

The Colorado Geophysical Corp., of which Dr. John H. Wilson, of Denver, is the head, has a crew of 19 men in the field in the Big Horn Basin making a seismograph survey of the area. The crew is making its headquarters at Powell and is shooting the area to the north of Oregon Basin.

J. W. Bales' No. 1 Parker, C SW SW Sec. 23-49-89.
S.D. 125 ft.
Peter Evanoff's No. 1 Griffin, Lot 60, Sec. 4-55-97.
S.D. 1,594 ft.
Peter Evanoff's No. 2 Griffin, Lot 53, Sec. 28-55-97.
Rig.
Peter Evanoff et al's No. 1 McAllister, Lot 40, Sec. 2-55-97.
Suspended location.
Ohio Oil Co.'s No. 2 Sidon Canal, C SW SW Sec. 24-56-97.
Drlg. 4,105 ft.
Ohio Oil Co.'s No. 3 Byron Union, SE NW NE Sec. 22-56-97.
Drlg. 798 ft.
Ohio Oil Co.'s No. 4 Byron Union, SW NE Sec. 22-56-97.
Rig up.
Taylor Oil Co.'s No. 1 Hoskins, Lot 5 (SE SE), Sec. 25-56-97.
T.D. 5,275 ft.; lost 200 ft. of drill pipe while drlg. by old drill pipe at 4,950 ft.
Wyoming Oil & Ref. Co.'s No. 1 Evans, NE NE NW Sec. 12-49-91.
Drlg. 400 ft.

Carbon County

The importance of the discovery made on the Medicine Bow structure in the joint well of the Ohio Oil Co. and the California Co. in their No. 1 W. M. Kyle, NE SE NE Section 26-21-79, continues to be the outstanding development of the Rocky Mountain area. It is conceded to be the most important development in Wyoming since the opening up of Salt Creek. The well was listed as a completion on June 6 at 5,394 feet. The upper Sundance was cut at 5,155-5,206 feet and through a bradenhead it gauged 81,000,000 feet a day and spraying an estimate of 500 to 1,000 bbls. of distillate. The lower Sundance was at 5,299-5,391 feet and through the 3-inch tubing it flowed 275 bbls. the first hour and averaged 265 bbls. an hour for three hours. It was then shut in as all storage was full. The oil tests 63 gravity and with it was between 5,000,000 and 10,000,000 feet of gas a day. The two companies control around 7,000 acres on the structure and the geologists give it a closure of 2,700 feet. Important results are expected to follow this discovery. Not only is it, in connection with other discoveries in the Sundance in Lance Creek and Rock River and in the Dakota on the Quealy Dome in Albany County, expected to revive wildcattings on a large scale in Wyoming, but not unlikely will in the not distant future result in the Standard Oil Co. of California building a refinery in the state. Several wildcats have been drilled on the Medicine Bow structure in the past, but it is now apparent that they did not go deep enough.

Ohio Oil Co.'s No. 4 Diamond Cattle, SE SW NW Sec. 25-20-78.
Rigging up.
Ohio Oil Co.'s No. 10 Harrison & Cooper, NE NW SW Sec. 35-20-78.
After pumping 100 bbls. a day from upper Sundance at 3,061-3,196 ft., C.O. to deepen.
Earl W. Reeder, Inc.'s No. 1 Whitford, SW SE SE Sec. 24-20-84.
Drlg. 4,590 ft.
Earl W. Reeder, Inc.'s No. 1 Union Pacific, C SW SW Sec. 19-20-83.
S.D. 5,931 ft.; may deepened.

CONVERSE COUNTY

Chadron-Osage Oil Co.'s No. 1 State, SW cor. Sec. 16-32-69.
S.D. 460 ft.
Continental Oil Co.'s No. 9 Whiteside, 3,680 ft. S of N line and 1,972 ft. W of E line, Sec. 7-33-76.
Drlg. 230 ft.
Otto Olston et al's No. 1 Carey, Sec. 6-32-74.
S.D. 642 ft.
John Ackard's No. 1 Daniels, SW SW SE Sec. 17-32-71.
Drlg. below 2,600 ft.

FREMONT COUNTY

Mid-American Oil Co.'s No. 3 Government, NW NE SW Sec. 14-28-92.
Set 15½-in. at 50 ft.
Monongahela Oil Co.'s No. 1 Wisda, NE SE SE Sec. 13-28-93.
Drlg. 3,130 ft.
Tropic Oil Co.'s No. 1 Government, C SE SW Sec. 34-27-90.
Drlg. 2,701 ft.

Hot Springs County

Two new operations were reported in Hot Springs County. The California Exploration Co.'s No. 2 Government, NW SW NW Section 7-44-96, Waugh Dome, is spudding at 197 feet. It is an east offset to the same company's No. 1 Government, the discovery well on this structure, which was completed last January for 538 bbls. on the pump the first 24 hours. The other operation is Oscar B. Grace's No. 1 Government, SW NW NW Section 21-43-92, on the Kirby Creek structure. It is rigging up machine. Kirby Creek is a small dome about 3 miles long. The surface is the Cody shale. Ohio Oil Co. drilled several small producers in the Wall Creek at around 300 feet a number of years ago, but there has been no development in recent years.

Argo Oil Co.'s No. 16 Ellen, NE SE NW Sec. 14-44-98.
Making 1 bailer of water per hr. at 1,600 ft.
California Exploration Co.'s No. 2 Government, NW SW NW Sec. 7-44-96.
Spudding at 197 ft.
Fern Oil Co.'s No. 1 Government, CSL SW SW Sec. 11-44-98.
Moving in materials.
Oscar B. Grace's No. 1 Government, SW NW NW Sec. 21-43-92.
Rigging up machine.

LINCOLN COUNTY

Senrab Oil Co.'s No. 3 Government, N SE NW Sec. 10-26-113.
S.D. 1,611 ft.

Niobrara County

The Lance Creek Field in eastern Wyoming, which has been staging a pronounced comeback in recent months by the completion of several large wells in the Sundance, scored again this week when the Argo Oil Co.'s No. 3 Elliott, C NE NE Section 6-35-65, came in as a producer, estimated at 3,000 bbls. a day as it stands. It was drilled to 3,810 feet and cut 59 feet of the Sundance at 3,743-3,804 feet. It then went through 3 feet of black shale and 3 feet of red shale. It is not certain yet whether it penetrated the lower Sundance which was the most prolific horizon in the wells to the northeast. On a drill stem test it made better than 100 bbls. an hour. Casing will be run to the top of the pay and coring will be resumed to determine whether it has penetrated the lower bench of the formation. Assuming that it has gone through that horizon, it is running about 100 feet higher than the nearest Sundance well to the northeast. It is about three-fourths of a mile to the southwest of the Ohio Oil Co.'s No. 6 Lamb, which was completed for 4,000 bbls. a day early this month and is now pinched to 1,600 bbls. daily. Wells so far drilled prove up about one section for Sundance production, but the indications are that a much larger area will be found productive. More than four sections are within the contours of these wells, but it is admitted that the former maps form little basis for determining the size of the pool in the deeper formations.

One other well was completed in the Continental Oil Co.'s No. 1 Apex-3, SW NE SW Section 34-36-65. It was an old well deepened from 3,406 feet to 3,538 feet where it ran into difficulties and was plugged back to 3,444 feet and recompleted for 300,000 feet of gas a day.

Argo Oil Co.'s No. 3 Elliott, C NE NE Sec. 6-35-65.
T.D. 3,810 ft.; running pipe to top of sand. Showed 100 bbls. an hr. on drill stem test.
Black Hills Ref. Co.'s No. 1 Wright, SE SE SW Sec. 22-36-64.
Moving in rotary equipment.
Continental Oil Co.'s No. 2 Schuricht, C SE NE Sec. 6-35-65.
Set 12½-in. at 224 ft., W.O.C.
Interstate Oil & Ref. Co.'s No. 1 Morrell, NW NE SE Sec. 2-39-61.
S.D. 3,030 ft.

(Continued on Page 87)

TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to sumbit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the question is considered to be confidential.

Questions requiring a discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

Mineral Seal or Absorption Oil Use and Properties

What is mineral seal oil? What is it used for and what are the specifications for it?—W. S. H.

Mineral seal oil was originally used as an illuminating oil, especially in signal lamps in place of the oil derived from the seal, and other oils of marine origin. With the introduction of the absorption process for extracting gasoline from natural gas this oil was used as the absorbing medium. The name absorption oil has become more commonly known.

Mineral seal oil is obtained by the direct distillation of petroleum, being the fraction condensed after kerosene. It may be classified as a high grade gas oil.

The examination of the absorption oil marketed indicates a wide variation in quality. Samples ranging from 30 to 40° A.P.I. suggest that frequently this oil is mostly lubricating oil. Many purchasers especially desire an oil with a low pourpoint, as a high pourpoint oil is liable to give trouble, particularly with respect to the formation of emulsions.

Day, in the Handbook of the Petroleum Industry, Vol. 1, page 740, gives several analyses of mineral seal oil, from which the following is quoted:

MINERAL SEAL ABSORPTION OIL

	Temp. °F.
Viscosity	45 to 50 @ 100°
Flash	300°
Initial boiling point	518°
Endpoint	666°
Cold test (pour)	30°
Gravity	38.5/39.5

The present practice in the natural gasoline industry is to purchase an oil for extracting the gasoline from gas, that will suit the individual plant conditions. The first consideration is that the oil will not begin to boil within the distillation range of the gasoline. In general the absorption oil is required to be of such quality that it will in no way contaminate the gasoline. The principal variables that have to be considered in the extraction process, related to the oil, include richness of gas, temperature, pressure, velocity, surface exposure, supply of oil, efficiency and plant design.

Detecting Degras In Compounded Oil and Grading

What is a simple test for showing the percentage of degras in a compounded oil? What is the best method for grading degras?—A. E. F.

The presence of degras in an oil is easily detected by its distinctive odor. If this is not apparent upon smelling the oil it will usually be brought out upon rubbing a drop on the palm of one's hand. The saponification number of degras varies but 120 may be considered as quite close to the average, so the approximate percentage may be estimated from the saponification number of the sample:

$$\text{Per cent degras} = \frac{\text{Sapon. No. of oil} \times 100}{\text{Sapon. No. of degras}}$$

The grading of degras may be made by means of a chemical analysis; determining water, ash, saponification number, free acids, total fat, etc., but the short cut frequently used by grease makers, is by trial against a known pourpoint cylinder stock. One to five per cent of the degras to be tested is dissolved in 99 to 95 c.c. of the standard cylinder stock. This is thoroughly mixed, heated to 150° F., well mixed again and set aside for 12 to 24 hours. Then the pourpoint is determined and the result compared with that of the standard.

The grading of four samples of degras was made with oil containing 1, 2 and 5 per cent. The results are shown in the table, the samples being identified by saponification number. The pourpoint of the oil was 44° F.

Saponification No.	Quantity of degras added, per cent: 1	2	3
	Pourpoint found, °F.		
86	20	20	21
119	16	17	14
130	18	19	18
142	20	20	18

Coefficient of Friction of Oil Found by Special Apparatus

How is the coefficient of friction of a lubricating oil determined in a practical way? What I mean is, what kind of a machine is required to test an oil and how are the results calculated to coefficient of friction?—W. R. H.

The coefficient of friction of an oil may be determined by means of special apparatus known as a friction testing machine. There are several different machines available. These operate on the principle of applying loads to the lubricated bearing or test element until the film of oil is broken and seizure results.

The meaning of the term and an outline of the method for deriving it follows from the paper by H. C. Mougey, The Oil and Gas Journal, March 27, 1930, page 41.

"Since lubricating oils are used to lubricate bearings, a very desirable property is the ability of the oil to separate the surfaces and thus avoid metal-to-metal contact. As the result of the work of a number of investigators it has been found that the coefficient of friction, for fluid film lubrication, is proportional to

$$\frac{Zn}{P}$$

where Z is the absolute viscosity of the oil, n is the speed of rotation, and P is the load in pounds per square inch of projected area. In other words, for fluid film lubrication, the load carrying ability of an oil depends on its viscosity and the higher the viscosity of an oil the greater the load it will carry, but the greater the friction that will be developed at any definite speed and load.

"It has been found that fluid film lubrication fails when either of both the viscosity of the oil or the speed are too low or when the load is too high. There is some question as to how low viscosity can be before a lubricant is too thin for use in an automobile engine."

Ice On Aircraft Carburetor Due to Fuel and Air

What is the cause of the formation of ice about the carburetor of air craft engines?—N. D. E.

The rate of evaporation of a gasoline will depend upon the volatility, the more volatile the liquid the greater will be the evaporation about the carburetor of an engine. This may be so rapid that enough heat will be extracted from the air to cause an appreciable cooling. If the temperature drop is enough to cool the air below the dew point any moisture present will be condensed, or under extreme conditions the water will become ice. Should the ice build up on the throttle valve it may result in the valve becoming jammed.

"In an engine using a carburetor, the latent heat required to convert the liquid fuel into vapor is provided:

1. By the intake air—which is usually preheated before entering the carburetor.

2. By contact with some heated surfaces (hot spots) in the induction system.

3. By contact with the hot surfaces of the cylinder head, piston, etc., during the suction and compression strokes.

"The proportions of the total heat required which will be supplied from each of these sources will depend upon the volatility of the fuel, other conditions remaining the same.

"As the volatility of the fuel is increased and the heat for evaporation taken from the intake air becomes greater, the tendency to form ice is also increased. The apparent anomaly is therefore explained that fuel of greater volatility may require more heating of the air intake, although it may be compensated for by reduced heat to the hot spot. Work carried out by the R.A.E. showed that the ice-forming tendency of a fuel was related to the temperature at which 25 per cent is distilled, but more recent experiments in America have produced a modified conclusion to this."

The quotation and material here are abstracted from the comprehensive paper by E. L. Bass, Fuels for Aircraft Engines, presented before the Royal Aeronautical Society in London, March 1, 1935.

Federal Specifications For the Several Aviation Gasolines

Will you kindly supply the essential points covered in the requirements for aviation gasolines commonly supplied under grades Navy, Fighting and Domestic?—C. I. A.

Navy Aviation Gasoline Bureau of Aeronautics

The latest specification that I have seen for Navy Aviation Gasoline is M-222, as revised January, 1935. This provides for the four grades designated 73, 80, 83 and 87 octane. The requirements common to the four grades are:

Freezing point, °F.	—76
Acid heat test, °F.	20
Gum (accel. test), mgm.	10
Corrosion (copper dish)	negative
Sulphur, per cent	0.10
Color, 73 octane	+25
Others are colored blue.	
Distillation:	
Recovery min., %	°F.
10	167
50	212
90	275
Residue, max., %	2.0
Vapor pressure at 100° F., lbs./sq. in.	7.0

Knock rating: The final knock rating of these grades is required as indicated by the designation. The 73 grade must be free from knock suppressors and attain not less than 87 octane number with the addition of a maximum of 5 c.c. of ethyl fluid per gallon.

The 80 octane grade shall show a knock rating of 80 octane number when containing a maximum of 2.5 c.c. ethyl fluid per gallon. No other knock suppressor than ethyl lead shall be used, except aromatic hydrocarbons or saturated hydrocarbons may be used for 73.

The 83 octane grade shall rate 83 octane number with a maximum ethyl fluid content of 3.5 c.c. per gallon.

The 87 octane grade shall attain the required rating with a maximum ethyl fluid content of 5 c.c. per gallon.

AVIATION GASOLINE FIGHTING GRADE AIR CORPS No. Y-3557 G., OCTOBER 27, 1933. 92 OCTANE NUMBER

Corrosion (copper dish)	none
Gum (accel. test), mgm.	10
Sulphur, per cent	0.10
Distillation:	
Min. per cent evaporated	At temp., °F.
10	167
50	212
90	275

The sum of the individual temperatures at the 10, 50, and 90 per cent points shall not be less than 564° F.

Residue, per cent	2.0
Vapor pressure at 100° F., max. sq. in./lbs.	7.0
Freezing point, °F.	—76
Water tolerance, ml.	±2.0

Knock rating shall not be less than that of the Standard Reference Fuel C-7 to which has been added 2.5 ml. tetraethyl lead per gallon, producing a rating of 92 octane number. Maximum lead, 6 ml. to 1 gallon.

The U. S. Army Air Corps specification for Domestic Aviation Gasoline is No. 3,559-D, April 15, 1935.

The outline of this specification is:

Antiknock value, 65 octane number.
Corrosion, negative.
Gum (copper dish), 10 mgm.
Sulphur, per cent, 0.10.
Distillation:

Per cent, min.	Temp., °F.
10	158
50	220
90	320
Sum of 10 and 50%	307
Residue, max., %	2
Vapor pressure, lbs./sq. in.	7
Freezing point, °F.	—76
Water tolerance, ml.	±2

PERSONAL PARAGRAPHS

C. E. WELLS, scout in Kansas for the Carter Oil Company, spent several days in Tulsa last week.

• • •

L. F. McCOLLUM, manager of exploration for the Carter Oil Company, is on a business trip to Houston, Tex.

• • •

J. A. DAUGHERTY, vice president of the Mid-Continent Supply Company, has moved to Tulsa from Houston, Tex., to manage the Oklahoma-Kansas offices.

• • •

JAMES A. UNDERCOFLER, of the Union Wire Rope Corporation, who suffered a broken shoulder several weeks ago, is convalescing at Morningside Hospital in Tulsa.

• • •

J. S. BLACKMAN, deputy conservation officer for the Tulsa territory, and MRS. BLACKMAN, have returned from a vacation trip to Washington, D. C., and New York City.

• • •

R. E. KIMSEY, manager of the Hughes Tool Company, Midland, Tex., announced his company has placed 15 additional men on the payroll in that district during the past two weeks. The company is now employing 38 men in the district.

• • •

IVAN SOLNIKOFF, engineer of the Carter Oil Company, will lead the discussion of engineering problems in the Fitts Field, before the Ada, Okla., Chapter of the Division of Production of the American Petroleum Institute, Friday evening, June 21.

• • •

E. J. MILLER, of Houston, Tex., is spending 10 days in Los Angeles, Calif., during his vacation period.

• • •

DR. OLIVER B. HOPKINS, of Sarnia, Ontario, geologist for Imperial Oil, Ltd., visited Calgary and the Turner Valley Field recently.

• • •

J. P. ROCKFELLOW, of the Union Oil Company of California, has been appointed assistant manager of industrial relations and personnel.

• • •

FRED A. ELVES, of Calgary, Alberta, recently looked over oil and gas prospects in the Maple Creek district of southwestern Saskatchewan.

• • •

FRED SHELTON, who has been connected with the oil development in Calgary and southern Alberta for several years, has returned to Tulsa.

• • •

COL. R. B. HARKNESS, of Toronto, natural gas commissioner for Ontario, recently completed his tour of inspection of the oil and gas fields in Kent County, Ontario.

• • •

A. O. PEGG, of the Union Oil Company was re-elected secretary of the Bilge Club of Los Angeles Harbor, and L. S. ANDERSON was re-elected treasurer for a fifth term.

• • •

JOHN CUTTER, with the Sinclair Refining Company, has been transferred from Tulsa to Fort Worth, Tex., as assistant manager of the company's refinery at the latter place.

• • •

MR. and MRS. KING HOUSTON and child are en route to Petrolia, Ontario, on a four months' furlough from Negritos, Peru, where Mr. Houston is in the production department of the International Petroleum Company.

FRED MOSER, of Tulsa, is home from a lengthy rest at a Battle Creek, Mich., sanitarium.

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J. J. TYSON, of St. Joseph, Mich., a director of Mid-Continent Petroleum Corporation, was in Tulsa last week.

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VICTOR COTNER, of Amarillo, Tex., chief geologist of the Piney Oil & Gas Company, has been on a tour of Oklahoma and Kansas oil fields.

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HARRY S. SCHUETZ, vice president of the Colona division of the Pittsburgh Screw & Bolt Company, of Pittsburgh, Pa., spent several days in Tulsa last week.

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W. MULLEMEISTER, superintendent of the Houston, Tex., refinery of the Shell Petroleum Corporation, was in the company's St. Louis, Mo., offices for several days last week, returning to Houston Friday.

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HAL SMITH is now dry hole supervisor of the Kansas conservation division of the Kansas Corporation Commission. C. T. ALEXANDER succeeds him at McPherson, and RAYMOND GEAR is now proration man at Lyons, Kans.

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W. S. HENRY, scout in Kansas for the Shell Petroleum Corporation, has been transferred to the land department as of June 15. He is succeeded by RUSSELL SPARENBERG, formerly with the Shell corporation in South Texas.

JOHN LANGSTON, chief scout for the Scout Oil Company, Dallas, Tex., has gone to Washington, D. C., with his family on a vacation.

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LARRY OLES, geologist of the Sinclair Prairie Oil Company in the Texas Panhandle Field, has moved his offices from Borger to Amarillo.

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ROBERT SCHURMAN, W. N. BEADLE and GEORGE R. ALEXANDER were recently elected vice presidents of the Byron Jackson Company.

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LOREN CRUM, geologist in the office of MARVIN LEE, consulting geologist of Wichita, Kans., has returned home from an extended trip over Oklahoma oil areas.

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WARD VICKERY, geologist of the Vernon Oil & Gas Company, and MRS. VICKERY and children, spent their vacation at Baltimore, Md. He is president of the Kansas Geological Society.

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R. A. WOTOWITCH, trustee of the National Petroleum Association, is arranging for a special train from New York to Los Angeles, Calif., to attend the American Petroleum Institute meeting in November.

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WILLIAM L. JAMES, purchaser for the Stanolind Oil & Gas Company, and former president of the Purchasing Agents Association of Tulsa, has returned to Tulsa from a hospital at Excelsior Springs, Mo., where he was a patient for a week.

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F. H. STOVER has returned to Chatham, Ontario, from a business trip to Toronto.

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DR. F. M. SEIBERT, with Gulf Production Company, Houston, Tex., spent a few days in the Panhandle and at Amarillo, Tex., during the week.

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HERSCHEL H. COOPER, consulting geologist at San Antonio, Tex., was the principal speaker at the Houston Geological Society's weekly luncheon the past week.

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JACOB VOLEMA, FRED H. ROTH and N. H. CLARK, of Muskegon, Mich., visited Chatham, Ontario, recently to investigate the oil and gas development in southwestern Ontario.

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JOE DAWSON, geologist for Gulf Production Company, with headquarters at San Antonio, Tex., was a business visitor to the company's offices at Houston, Tex., the past week.

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JERRY CURRIE, on the electrical staff of the International Petroleum Company in the Peruvian fields, his wife and three children, have returned to Petrolia, Ontario, on a four months' furlough.

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A. E. CUTHRELL, district petroleum engineer for the Humble Oil & Refining Company, formerly located in the Goose Creek, Texas, district, has been transferred to the Anahuac district in Chambers County, Texas.

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ERNEST L. WILSON, manager of the land department of the Simms Oil Company, Dallas, Tex., has been made a vice president of the Maracaibo Oil Exploration Corporation which is to open offices in Dallas in the near future.

DO YOU REMEMBER?

From The Oil and Gas Journal Files

25 Years Ago

June 20, 1910

The Union Oil Co.'s famous deep well just off the Salt Lake Field in California has been abandoned at the great depth of 5,760 feet. It is said only one other hole has been drilled deeper than this one. It found oil but it would cost more to pump it than the oil is worth.

Four California ladies, headed by Mrs. Alice McCall of Pasadena, have chipped in $5,000 each and organized an oil company to operate in the Devil's Den district, with headquarters at Plute, Kern County.

Joseph Sweeney is elected secretary and treasurer of the Petroleum Iron Works at Sharon, Pa. Mr. Sweeney started at the bottom with the National Transit Co. at Oil City, Pa., and seven years later was made oil buyer for the Seep Purchasing Agency at Sistersville. He became cashier of the Farmers and Producers Bank of Sistersville, and now he steps up to an important office with one of the large supply companies.

20 Years Ago

June 20, 1915

It is estimated that the population of the Cushing oil field in Oklahoma, including oil field towns, is 50,000.

Owing to the low price of oil and the high price of zinc many Mid-Continent oil men have turned their attention to the Miami, Okla., and Joplin, Mo., zinc regions and are making money. "Cleanups" are being made at over $100 per ton.

In the 19 years in which the Foster lease in Osage County, Oklahoma, has been in existence, the Osage Indians have been paid $4,000,000 in royalties. This has meant about $3,000 each for every Osage on the rolls. An enrollment in the Osage tribe has a value of $27,000. There are 2,230 Osages enrolled and they are worth altogether $60,210,000. They are the richest race in the world. Their "nation" has hardly been scratched for oil and their potential wealth is enormous.

10 Years Ago

June 18, 1925

There are 603 natural gasoline plants in Kansas, Oklahoma, Texas, Arkansas and Louisiana, with a capacity of 3,860,000 gallons daily.

The estate of the late Charles Clinton Burke, for many years identified with Standard Oil subsidiaries, but who retired in 1912 and died in 1924 at the age of 80 years, has been appraised at $6,233,950. He started in the oil business at Titusville.

Crude oil is being withdrawn from storage and the outlook for higher prices is favorable.

J. T. WILSON, driller, of Vancouver, British Columbia, recently made a business trip to Calgary, Alberta.

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JOSEPH EDWARDS, general manager of the Howard County Refining Company, Big Spring, Tex., was in San Angelo, Tex., last week.

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H. W. CAMP, general superintendent for the Empire Oil & Refining Company, was in Chicago for several days the past week, returning to Tulsa Friday.

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M. J. DAVIES, managing director of Globe Royalties, Ltd., of Calgary, Alberta, left recently for a trip to Vancouver, Seattle and interior British Columbia.

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R. W. McKINNON, of the Imperial Oil staff, left Edmonton, Alberta, recently by airplane for Fort Norman, where he will spend the summer in charge of the company's refining operations.

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FRANCISCO C. PLATZ, engineer of mines, Argentine government, Buenos Aires, Argentine, South America, is making a trip through United States oil fields collecting data on drilling and production methods.

• • •

F. M. BANKS, vice president of the Southern California Gas Company in charge of sales, has returned to Los Angeles from Atlantic City, N. J., where he attended an executive meeting of the American Gas Association.

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R. J. HUTCHINGS, of Calgary, Alberta, prominently connected with oil development in western Canada for many years, was elected a life member of the Canadian Manufacturers Association at its annual convention held recently at Hamilton, Ontario.

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M. E. WAGNER, production superintendent of the Marathon Oil Company, is on a trip of inspection of Oklahoma and West Texas properties.

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T. F. HOGAN, superintendent of the Gulf Refining Company refinery at Sweetwater, Tex., left on his vacation June 6. He will visit his home near Pittsburgh, Pa., and return about June 23 to Sweetwater.

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GEORGE RIGGS, geologist for the Skelly Oil Company at Amarillo, Tex., has resigned to take a similar position with the Bell Oil & Gas Company in that city. TOM NEWMAN, geologist for the Skelly company, is filling the vacancy at Amarillo until a transfer is made.

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C. I. KELLY, chief chemist of Herbert Green & Company, Ltd., London, has returned to England, after studying lubricating oil methods in this country. His company is building a new refinery in England providing for the solvent extraction and dewaxing of lubricating oils.

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D. W. POWER, auditor for the Railroad Commission at Kilgore, Tex., has been transferred to the Austin office. J. M. JOHNSTON, chief tender clerk, has been promoted to the position of auditor, and R. M. ROBERTS, member of the tender department, has been named chief clerk at Kilgore.

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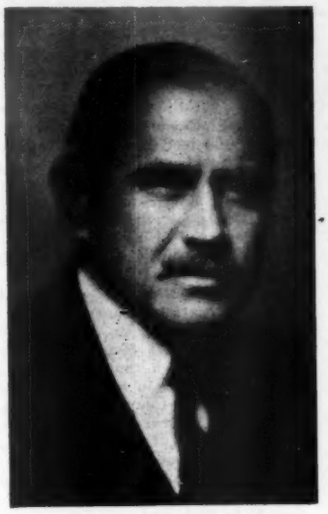
FRANK HARRISON, Pure Oil Company director of fire prevention and safety; PROF. BOURKE LODEWYK, of Central State Teachers College, Mount Pleasant, Mich., and S. FITZWATER, of the Zurich Insurance Company, were speakers at a recent safety banquet and meeting of Pure Oil and Pure Transportation Company employes, in the Porter Township Community Hall, Midland County, Michigan. About 175 attended the meeting arranged by C. E. DOUGHERTY, Porter district superintendent for the Pure Oil Company, who acted as toastmaster.

Devotes Time to Special Products

F. H. Bedford, Jr., member of the board of directors of the Standard Oil Company (New Jersey), devotes a large part of his time to directing the sale of special products which have become a major phase of the company's marketing operations.



F. H. BEDFORD, JR.

He also has had a prominent part in the company's widening sales of automobile accessories and other products closely associated with the distribution of petroleum products. Over the past few years the company has become one of the largest distributors of tires, as one phase of this expansion. Through another subsidiary the company has become an important factor in manufacture and sale of oil burners.

Mr. Bedford has been in an oil atmosphere from birth. He is a son of the late F. H. Bedford, who until his retirement in 1927 was vice president and a director of the Standard Oil Company (New Jersey). Following graduation from Amherst College, his first employment was at the Bayonne, N. J., refinery of the company in 1914. Later he became assistant to Peter Hurll of the Bedford Petroleum Company and traveled extensively abroad for that organization.

He returned to the United States in 1916 to take charge of the company's export sales of Nujol. After service with the A.E.F. he became manager of lubricating oil sales being closely associated with his father in this work.

He became a director of the parent New Jersey company in 1927 and a year later was elected head of the newly formed Stanco, Inc. He has headed other special sales organizations. At present he is president of the Atlas Supply Company of the tire division and Standard-Alcohol. He recently resigned the presidency of Stanco, Inc.

JAMES MITCHELL, of the McClanahan Oil Company, of Mount Pleasant, Mich., is recovering from a mild case of pneumonia.

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JOHN METHEANY, JR., has been placed in charge of a new land department established by the Roosevelt Oil Company, Mount Pleasant, Mich.

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E. E. DOUGHERTY, production clerk for the Stanolind Oil & Gas Company, Midland, Tex., was married to MISS BRAZEL HILLYER, of Brownwood, Tex., in that city on June 8.

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J. W. C. McKEE, of Mount Pleasant, Mich., recently returned from a business trip to McKeesport, Pittsburgh, Columbus and other manufacturing centers in Pennsylvania and Ohio.

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W. L. McLAINE, vice president and manager of production for the General Petroleum Corporation of California, has been in Casper, Wyo., in connection with the company opening an office there.

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C. G. SWANK, general manager of the southeastern division of the Socony-Vacuum Oil Company, has returned to his headquarters at Baltimore, Md., following an extensive survey trip through the Carolinas, the Virginias, and Maryland.

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W. S. S. RODGERS, president of the Texas Company, accompanied by A. R. WILSON, division superintendent of the Rocky Mountain division of the company, is making an inspection trip of company properties throughout Wyoming, Montana and Colorado.

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CHARLES E. CLASON, of Wichita, Kans., formerly of Dow Chemical Company at Midland, Mich., has accepted a position with Halliburton Oil Well Cementing Company, supervising treatment of wells in Kansas, Oklahoma, Texas, New Mexico, Louisiana, and Arkansas for the latter company. Mr. Clason is a chemist of 22 years' experience.

N. R. CRAWFORD, general manager, Dowell Incorporated, Midland, Mich., was in the Tulsa office of that company last week.

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JAMES C. ROWAN, of the Imperial Oil, Ltd., staff at Calgary, Alberta, left recently for Fort Norman to inspect the Imperial wells in that field, making the trip from McMurray to Fort Norman by airplane.

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DR. E. N. KEMLER, Pittsburgh, Pa., in the engineering division of the Gulf Research & Development Corporation, is in Texas on company business, visiting the fields in which Gulf Production Company has producing properties.

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D. A. HULCY, secretary and comptroller of the Northern Natural Gas Company and assistant to L. B. DENNING, president of the Lone Star Gas Company, has been appointed a vice president and member of the board of directors of the Lone Star Gas Company.

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BRUCE ROBINSON, formerly with the General Petroleum Corporation, has been appointed chief subsurface engineer by UMPIRE J. R. PEMBERTON and will be in charge of the department designated to obtain data on subsurface conditions in the Kettleman North Dome Field.

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URIAH J. BARR, for six years connected with the Union Gas Company of Canada, at Chatham, Ontario, has been appointed temporary manager of the company's Sarnia, Ontario, office, while MANAGER J. B. WILLIAMS is convalescing from illness. During the past year Mr. Barr has supervised the Sarnia office during Mr. Williams' illness while at the same time carrying on his own work in Chatham.

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WILLIAM A. COMSTOCK, former governor of Michigan, and FIELDING H. YOST, University of Michigan coach, have become interested in the new Crystal Township, Montcalm County, oil field in Central Michigan, and are frequent visitors at drilling wells.

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ELMER F. SCHMIDT, general superintendent of the Lone Star Gas Company, has been made a member of the board of directors; ROY COFFEE has been appointed general attorney and member of the board, and MARSHALL NEWCOMB has been named assistant general attorney.

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CLYDE TINGLEY, of Santa Fe, N. Mex., has been named the chairman of the New Mexico State Oil Conservation Board. STATE LAND COMMISSIONER FRANK VESELY was named secretary. DR. E. H. WELLS, state geologist, and president of the New Mexico School of Mines, is the third member of the board.

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DR. F. TATTERSFIELD, head of the department of insecticides and fungicides, Rothamsted Experiment Station, Harpenden, Herts, Great Britain, is visiting the United States. He was in the Mid-Continent last week where he was introduced to executives of the oil companies by DR. TOMAS LEWIS, of S. B. Penick & Company. Doctor Tattersfield is an authority on pyrethrum and derris which are extensively used in insecticidal petroleum sprays.

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JOHN D. ROCKEFELLER, SR., arrived Friday, June 14, at Lakewood, N. J., from Ormond Beach, Fla., where he spent the winter. His 500-acre estate at Lakewood is one of his summer homes. Later in the summer he probably will go to his Pocantico Hills estate in Westchester County, New York. Mr. Rockefeller, who will be 96 years old next month, is reported to be in better health than he was last summer when he returned from his winter home.

Oklahoma Fields

(Continued from Page 73)

at 2,915 feet, total depth 2,931 feet. It had not been shot or acidized.

Logan County

Eason Oil Co. completed its No. 3 Katscher, SW SE NW Section 34-17-4w, in the southern part of the Crescent Pool in Logan County. It had first Wilcox sand at 6,265-80 feet, total depth. It flowed 833 bbls. in six hours, and was given a potential of 3,334 bbls. It had previously flowed 2,277 bbls. in 24 hours. The well also made about 4,000,000 feet of gas in its early stages.

Sinclair Prairie Oil Co. has made a location for No. 1 Foree, NE NE NE Section 1-16-1w, Langston area (corrected farm name); Gypsy Oil Co. had cellar dug for No. 4 Knowles, SE SW NW Section 34-17-4w, Crescent Pool; Shell Petroleum Corp will plug back No. 3 Story, SW SE SW Section 30-19-4w, in the Marshall Pool to 4,280 feet.

Helmerich & Payne and Gypsy Oil Co.'s No. 1 Moss, SE SE SW Section 11-17-1w, in the Langston Pool, which was drilled to 5,194 feet and plugged back to 4,950 feet, where gas presumably from Hunton lime unloaded the hole as pipe was being pulled, was to have been tested in Hunton but the rig was pulled in and the test may be abandoned.

The Sinclair Prairie Oil Co.'s No. 1 Koatsch, SW SW SW Section 23-15-3w, did not get a water shut-off and was shut down. Rig was being built for a test in NE NE SE Section 27-15-3w.

In the Crescent Pool, Gypsy Oil Co. and Carter Oil Co.'s No. 3 Knowles, SW SW NW Section 34-17-4w, deepened from 6,220 feet to second Wilcox at 6,333 feet, increased its production from 250 bbls. a day to 625 bbls. a day, total depth 6,336 feet.

Oklahoma County

Slick-Urschell, Inc., and others made a location for No. 1 Zielny, NE cor. SW Section 29-13-3w, Oklahoma City Field.

Mid-Continent Petroleum Corp. made a location for No. 5 Young, SW NW NE Section 31-14-3w, Edmond Pool. Sinclair Prairie Oil Co.'s No. 1 Glenn, NE NE SE Section 27-15-3w, is a location.

In the Edmond Pool, the Mid-Continent Petroleum Corp.'s No. 3 Young, SW SE NE Section 31-14-3w, flowed 2,035 bbls. of oil in six hours with gas at the rate of 35,000,000 feet, from Wilcox sand topped at 6,365 feet, total depth 6,575 feet. Later it flowed 1,552 bbls. in four hours, with gas at the rate of 26,000,000 feet. No. 4 on the lease, a location northwest of No. 3, was 115 feet in Wilcox sand at a total depth of 6,700 feet, with saturated sand reported in the cores taken.

Marathon Oil Co.'s No. 3 Dahl, NW NW SE Section 31-14-4w, old well drilling deeper, cored from 6,700-20 feet. The well was opened up 20 hours and flowed 2,056 bbls. of oil. No. 4 Dahl, SW SE SE Section 31, was deep in the Wilcox sand at 6,540 feet. No. 5 Dahl, SW SE SE Section 31, was credited with a potential production of 11,710 bbls. per day and 12,000,000 feet of gas on its six-hour flow. It was not a completion.

Sunray Oil Co. and Franklin & Fain's No. 2 County, 79 feet from north and 687 feet from east lines of NW quarter Section 1-11-3w, Oklahoma City, concluded its fishing job and was drilling at 6,123 feet.

Over west in Canadian County, R. Carl Larkin's test, No. 1 Province, NW NW NE Section 33-13-5w, was drilling at 7,228 feet. It had Oread at 5,268 feet and Checkerboard lime at 6,769 feet.

Lincoln County

Texas Co.'s No. 3 Hoover, 770 feet from north and 990 feet from east lines of SE quarter Section 33-14-4, Gessman Pool, Lincoln County, was completed in Cleveland sand at 3,056-60 feet, total depth. It flowed 265 bbls. in 24 hours, through casing.

Twin State Oil Co.'s No. 1 Cook, NW SW SW Section 1-14-3, plugged back from 5,068 feet to 3,912 feet, and then drilled down and tested at various levels, got a hole full of oil at 4,085 feet and drilled to 4,300 feet. It swabbed 150 bbls. of oil in 24 hours and the crew was preparing for a shot. Same company's No. 3 Cook, SE SE SW Section 1-14-3, had Wilcox sand at 5,003-05 feet, total depth, and a hole full of water.

Noble County

Midco Petroleum Corp., a pioneer operator in the Billings Pool, in Noble County, started a deep test in that pool in April, got the base of the Pennsylvanian at 4,156 feet and the top of the Arbuckle lime at 4,250 feet where it had a showing of oil to 4,257 feet and the operation was shut down to set tanks and make connections. When the well was opened and while tubing was being run the well flowed at the rate of 50 to 65 bbls. per hour and filled two of the tanks in 20 hours. The well is No. 1-A Yost, SW cor. NE NW SE Section 22-23-2w. It produces 43 gravity oil.

The Shell Pipe Line Corp. is running a line from its main line to the well and will be connected this week.

The Phillips Petroleum Co. thought well of this deep test, as it bought subleases from the Midco Petroleum Corp. in May on 320 acres near the well, with oil and gas rights only below 3,000 feet. It paid $25,000 in cash and $30,000 in oil for the deep rights on the W half SW Section 15-23-2w, S half SE Section 16-23-2w, NE quarter and E half SE Section 21-23-2w, and W half NW Section 22-23-2w. It must start a well within 60 days of the signing of the contract in the S half SE Section 16-23-2w.

In the Lucien Pool, Magnolia Petroleum Co.'s No. 1 Sharp, C SW SW Section 34-20-2w, total depth 5,186 feet, where it had water, was plugged back to 5,039 feet and shot with 50 quarts in first Wilcox sand at 5,030-39 feet. It swabbed and flowed 178 bbls. in one day. It may be acidized.

Pawnee County

Trees Oil Co.'s No. 1 Wedd, C SE SE Section 27-24-5, a wildcat north of the Ralston Pool in northern Pawnee County, was dry and abandoned in Mississippi lime at 3,137-3,295 feet, total depth. No showings were reported in the progress of this well.

In the Panhandle

In the far away Texas County, in the Panhandle of Oklahoma, Ben F. Ash is reported to have abandoned his test in Guymon townsite, C NE SE Section 30-3n-15w (Cimmaron Meridian). It had been drilled to 2,420 feet, but the rig blew down and the operation was shut down since last December.

Harmon County

Massad & Caudle were moving in material for a wildcat test in Harmon County, No. 1 Crosnoe, SE SE SW Section 14-3-25w, about 7 miles northeast of Hollis.

Caddo County

F. A. Turner and others have rig up for a 2,500-foot test in NE NE SW Section 1-5-11w, northeast of Apache, Caddo County. English Drilling Co. was rigging up tools to deepen No. 2 Gafney, C8L NW SE Section 31-6-9w, in the Cement Pool, present depth 2,325 feet.

Greer County

In northern Greer County, H. N. Payne and others are moving in tools to deepen No. 1 Tressell, NW cor. Section 1-7-22w, an old gas well, total depth 1,785 feet.

Beckham County

In the township east of the Sayre Field in Beckham County, E. L. Martin and others had machine in to start a wildcat, No. 1 Robberson, C NE SE Section 1-9-22w.

SOUTHERN FIELDS

L. Loper's No. 1 Conrad, NE cor. Section 35-1s-19w, Tillman County, a wildcat, was dry and abandoned at 1,737 feet.

Shasta Oil Co.'s No. 9 Cobb, 648 feet from south and 870 feet from east lines of NE quarter Section 2-2s-10w, Waters Field, Cotton County, is a 12-bbl. completion at 2,145-59 feet, total depth.

Carter Oil Co.'s No. 1 McKiddy, SW SW NE Section 8-2s-2w, Wildcat Jim Pool, Carter County, started at 50 bbls. a day. It was drilled to 2,710 feet and plugged back to 2,470 feet and completed.

Stephens County completions included California Producers & Operators Co.'s No. 1 Florence, SE cor. SW SE SW Section 12-3s-6w, dry and abandoned at 1,807 feet; Canadian drilling Co.'s No. 2 Woods, 150 feet north and 330 feet west of C Section 12-3s-6w, dry and abandoned at 1,013 feet; B. F. Lundy and others' No. 5 Carson, SW cor. SW NE Section 9-1n-8w, dry and abandoned at 3,012 feet.

Shell Petroleum Corp.'s No. 53 Franklin, 1,280 feet south and 980 feet east of NW cor. Section 8-4s-3w, in the Healdton Pool, Carter County, was a 5-bbl. pumper, completed in sands at 984-86 feet and 1,020-23 feet. These are the sands from which thousand-barrel gushers were brought in back in 1912-15.

In Marshall County, Jess Cook and others' No. 1 Bruce May, NE NE NW Section 12-8s-5e, Isom Springs area, was dry and abandoned at 570 feet.

In Jackson County, Mason Oil Co. and others' No. 1 Minor, NW NE NE Section 15-1n-20w, was completed in granite wash at 1,414-46 feet, total depth 1,456 feet, and started at 45 bbls. per day. Selby Oil & Gas Co.'s No. 1 P. Mack, NW cor. NW SW Section 5-2n-20w, was abandoned at 1,855 feet in dry granite wash. Petroleum Products Co.'s No. 2 C. W. Cole, SE SW SE Section 34-2n-20w, pumped 35 bbls. in 24 hours from granite wash at 1,428-62 feet, total depth, and was completed.

Jud Leath and others abandoned the location for No. 1 McConnell, NW NW NW Section 22-3n-24w, in southern Greer County, which was to have been a 3,000-foot test and for which derrick had been built and rigged up, and tools were moved away. In the same county, Gled Oil Co.'s No. 1 Leeker, SE cor. Section 6-4n-21w, had granite at 1,945 feet and was drilled to 2,167 feet and abandoned.

J. D. Petty Oil Co. abandoned its Coal County test, No. 1 McMillan, SW NW NE Section 16-1s-8e. It was at a total depth of 1,491 feet, and 5-inch pipe was being run, but the casing dropped and made a hopeless fishing job.

Claro Oil Co.'s No. 1 C. B. Bass, 510 feet north and 1,170 feet east of C Section 9-1s-14, in Atoka County, was dry and abandoned at 1,250 feet.

New work reported from the southern counties include the following operations:

Karchmer & Smith's No. 3 Lynn, SW cor. SE NE NE Section 31-1s-2w, Tatums Pool, Carter County, rigging up rotary tools; Coline Oil Co.'s No. 11 Higgins, NE SE SW Section 6-2s-2w, Wildcat Jim Pool, Carter County, location; Skelly Oil Co.'s No. 1 Bair, 947 feet south and 373 feet west of C Section 9-2s-2w, set 96 feet of 12½-inch casing and drilling at 108 feet; Shell Petroleum Corp.'s No. 54 Franklin, 950 feet from south and 500 feet from east lines of NE quarter Section 8-4s-3w, Healdton Pool, drilling at 500 feet; Shasta Oil Co.'s No. 11 Cobb, 1,170 feet north and 770 feet east of C Section 2-2s-10w, Cotton County, drilling at 500 feet.

Canadian Fields

(Continued from Page 75)

Oil Co.'s No. 1, H. Orcutt location, NE Section 18-1-21w4, is below 3,620 feet in the Blackleaf formation below the Colorado shale. Potential oil horizons are the Blairmore, immediately below the Blackleaf, the Ellis and the Madison lime, the Madison contact around 5,000 feet being regarded as the best possibility.

In the Vermilion district, east-central Alberta, Tenwell Gas & Oil Co.'s No. 1, LSD 9, Section 36-50-7w4, is below 520 feet.

Aldersyde Structure

On the Aldersyde structure, east of Turner Valley, Ranchmen's Gas & Oil Co.'s No. 1, LSD 16, Section 13-20-28w4, is below 6,390 feet in very hard formation.

Globe Royalties' No. 1, LSD 3, Section 2-20-29w4, is moving derrick from Home Oil Co.'s No. 7 in South Turner Valley. Robert Wilkinson of Calgary has purchased a large block of freehold acreage in the same general area, about 6 miles northwest of High River, and is negotiating for development.

Saskatchewan Drilling

In the Hudson Bay Junction area, northern Saskatchewan, Trail Blazer Oil & Gas Co.'s No. 1, SW Section 32-44-3w2, shut down last fall at 610 feet with a show of heavy crude, has been deepened to 1,000 feet. Some additional oil shows have been encountered. In the Kakwa Field, about 25 miles farther south, Amalgamated Gas & Oil Co. of Winnipeg has gas production, averaging 250,000 to 300,000 feet, in two shallow wells drilled originally as structure tests. Additional drilling will be done this season in both areas, the gas production being used as fuel. Petroleum Engineering Co. is handling the drilling for both companies. Special mobile equipment for use in this field is being delivered this month by the Howell Manufacturing Co. of Minneapolis.

Amalgamated Gas & Oil Co. is also starting work in the Blackfoot area south of Regina. An unfinished test of Blackfoot Oil & Gas Development Co. in Township 13-20-w2 has been standing at 1,750 feet. A second well is being located for the Amalgamated company.

Drilling in Ontario

In the Dover Field, Kent County, Ontario, Central Pipe Line Co.'s No. 1, Joseph Antaya farm, Lot 1, Concession 4, Dover East Township, bottoming in the Trenton limestone at 3,309 feet, was shot with 380 quarts. The natural flow was about 500,000 feet a day. The shot brought this to around 4,000,000 feet, which later settled to about 2,000,000 feet.

E. P. Rowe and associates are rigged on the Vital Duphette farm, SW cor. W half Lot 2, Concession 4, closely offsetting Central Pipe Line's No. 1 to the southeast.

About a mile east of the nearest Dover producer, F. H. Stover, George Rawlings and associates' No. 1, Charles Peltier farm, corner Front Concession and Stirling Side Road, is below 850 feet. E. P. Rowe and associates have located a test on the south side of the River Thames in Raleigh Township on the Bruette farm near Prairie Siding, south and west of Stover-Rawlings' No. 1.

In the Eden Field, Elgin County, E. P. Rowe's No. 1, Ball farm, Lot 26, Concession 8, Bayham Township finished in the sweet gas sand with 500,000 feet a day. It had 27 feet of good sand, and will be shot with 40 quarts. C. A. Simpson and associates' No. 1, Williams farm, Lot 25, Concession 8, is spudding.

Contract Let for Supply From Pledger Gas Field

HOUSTON, Tex., June 17.—Contract has been let to the Humble Oil & Refining Co. to supply gas from the Pledger gas field in Brazoria County to the Texas Gulf Sulphur Co. at its plant in the Boling Field in Wharton and Fort Bend Counties for 9 cents per 1,000 feet. The service is to begin January, 1936, and the Humble Pipe Line Co. will lay a line from the field to the company plant 10 miles to the north. This is the second outlet for the field's gas supply. The Danciger Oil & Refining Co. recently completed a line out of the field, to supply the Duval Texas Sulphur Co.'s plant also located at the Boling Field.

MARKET RECORD OF OIL SECURITIES

Active Oil Stocks Listed on New York Stock Exchange

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1935 High	1935 Low	Week ended June 15 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends paid in 1934	1934 High	1934 Low	1933 High	1933 Low
70¾	48½	6,300	70¾	69	69	Amerada Corp.	788,675	N.P.	50cQ	4-30-35	$2.00	55⅝	39	47⅝	18½
28	21⅜	15,900	27½	25¼	27¼	Atlantic Refining	2,664,902	$25	25cQ	6-15-35	1.00	35¼	21½	32½	12⅝
10⅜	5⅞	8,300	9¼	8¾	8⅞	Barnsdall Corp. A	2,248,795	$5	....¶	6-30-35	....	10	5⅞	11	3
7¾	3⅜	26,600	7	6¼	6⅝	Columbia Gas & Elec.	11,610,036	N.P.	....	5-15-34	‡ .25	19¼	6⅝	28⅛	9
10½	6½	27,300	9⅛	8¾	9⅛	Consolidated Oil Corp.	13,996,072	N.P.	14c	10-31-34	.42	14¼	7¼	15⅝	5
23	15⅛	14,200	21½	20⅛	21½	Continental Oil of Delaware	4,682,722	$5	12½c	4-30-35	.50	22⅝	15⅝	19⅝	4⅞
19¼	11¾	6,100	18⅛	16½	18	General Asphalt	387,149	$10	....	6-15-32	....	23½	12	27	4⅝
3⅝	1½	600	2⅜	2⅜	2⅜	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	5⅝	2½	7⅜	1⅞
1⅜	½	2,100	⅝	⅝	⅝	Louisiana Oil Refining	1,302,158	N.P.	....	.. ..	....	3⅜	¾	4	⅝
13⅞	9½	4,500	12½	12	12⅜	Mid-Continent Petroleum	1,857,912	$10	15c	5-15-35	.50	14¾	9⅛	16	3⅜
19	9	1,300	16⅞	16	16⅝	National Supply of Delaware	382,591	$25	....	5-15-31	....	21⅛	10	28⅝	4
14⅛	9¼	15,600	12½	12⅛	12½	Ohio Oil Co.	6,563,107	N.P.	15c	6-15-35	.45	15⅞	8½	17⅝	4⅝
9½	7	1,800	8¾	8	8½	Pacific Western Oil	1,000,000	N.P.	40c	11-30-34	.40	9⅝	5½	9½	3
1⅝	⅝	200	¾	¾	¾	Panhandle P. & R.	198,770	N.P.	....	....	....	2½	⅝	4¼	⅝
23	13¾	25,300	22¾	21¼	22½	Phillips Petroleum	4,154,687	N.P.	25c	6-1-35	1.00	20¾	13⅜	18¾	4⅝
11⅝	6½	3,500	9½	9¼	9½	Plymouth Oil Co.	1,014,082	$5	25c	3-30-35	75c & 4% Stk.	16¾	7¼	17⅝	6⅜
9¼	5⅞	17,300	8½	8⅞	8½	Pure Oil	3,038,370	N.P.	....	9-1-30	....	14⅞	6⅛	15⅜	2½
43¼	29½	700	43¼	41⅞	43¼	Royal Dutch N. Y. shares	432,224	$14	$1.35	7-31-34	1.35	39½	28⅝	39⅜	17⅝
35⅞	20¾	5,300	32¼	30½	31¾	Seaboard Oil of Delaware	1,204,460	N.P.	15cQ†	6-15-35	1.00	38⅜	20¾	43⅜	15
11½	5½	18,100	11	10⅝	10⅝	Shell Union Oil	13,070,625	N.P.	....	6-30-30	....	11½	6	11⅝	4
97	63⅛	1,200	92	89	89¼	Shell Union Oil pfd.	400,000	$100	....	7-1-31	....	89	57	61	28½
18⅜	13½	6,400	15	14⅜	14⅞	Simms Petroleum	461,698	$10	50c	2-1-35	.55	17⅛	7¼	12⅝	4⅞
11⅜	6½	1,200	10¾	10	10½	Skelly Oil	1,008,514	$25	...	12-15-30	....	11½	6	9⅞	3
15⅜	11	51,300	14⅛	13¼	13⅞	Socony-Vacuum	31,154,379	$25	15cQ	3-15-35	.60	19⅞	12½	17	6
38⅞	27¾	14,800	35½	33⅞	35⅛	Standard Oil of California	13,102,900	N.P.	25c	6-15-35	1.00	42⅞	26½	45	19⅛
27¼	23	10,400	26	25½	25⅞	Standard Oil (Indiana)	15,215,677	$25	25cQ	3-15-35	1.00	32⅜	23¼	34	17
32	26½	100	27	27	27	Standard Oil of Kansas	200,000	$10	50cQ	10-31-34	2.00	41	26	39⅞	12⅜
50½	35¾	8,900	49½	48½	49	Standard Oil of New Jersey	25,856,081	$25	50cSA‖	6-15-35	1.25	50⅛	39¼	47½	22¾
75½	60½	800	75½	75	75½	Sun Oil	1,733,013	N.P.	25cQ	6-15-35	$1 & 9% Stk.	74¼	51½	59	35
23¾	16½	22,300	21⅝	20½	21⅜	Texas Corp.	9,486,417	$25	25cQ	7-1-35	1.00	29⅜	19⅝	30½	10⅜
4¾	3¼	14,000	4¾	4	4⅝	Texas Pacific Coal & Oil	880,703	$10	....	12-31-29	....	6½	2½	6½	1⅝
12	7⅝	8,700	11	10½	10⅞	Tide Water Associated	5,631,341	N.P.	....	2-16-31	....	14⅜	8	11¾	3⅛
102¼	84	2,000	100¼	99¾	100¼	Tide Water Associated pfd.	666,524	$100	$3§	7-1-35	$8.50	87	64½	65¼	23½
20⅛	14¾	6,300	18¾	17¾	18½	Union Oil of California	4,386,070	$25	25cQ	5-10-35	1.00	20½	11½	23⅜	8½
26¼	20⅞	1,400	25	24½	24½	Union Tank Car Co.	1,200,000	N.P.	30cQ	6-1-35	1.20	25¾	15⅝	22¾	10½
2⅝	1	1,200	2	2	2	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	5¾	2	5½	2

*Ex-dividend. †Plus extras. ‡Payable in preferred stock. §On account of accumulated and current dividends. ‖Dividend 4/75 Mission Corp. paid 3-15-35. ¶Dividend of one-half share Barnsdall Refining Corp.

Active Oil Stocks Listed on New York Curb

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1935 High	1935 Low	Week ended June 15 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends paid in 1934	1934 High	1934 Low	1933 High	1933 Low
39	30½	500	39	38¾	39	Buckeye Pipe Line Co.	200,000	$50	75cQ	6-15-35	$3.00	38	26	39¾	25
4¼	1⅝	900	3	2¾	2¾	Carib Syndicate	799,020	25c	....	.....	....	5½	1½	7¾	⅛
157	115	150	132¼	129	129	Chesebrough Mfg. Co.	120,000	$25	$1Q†	6-28-35	11.50	150	116	129	71
2¼	¾	34,800	1⅞	1⅜	1⅜	Cities Service	37,804,394	N.P.	....	6-1-32	....	4¼	1¼	6¼	1⅛
1¼	½	5,000	11/16	½	½	Colon Oil	2,200,000	N.P.	....	.....	....	3¼	½	4	⅛
⅞	⅜	300	5/16	½	5/16	Cosden Oil	399,687	$1	....	.....	....	3⅞	½	3⅞	1⅛
18⅞	10	19,800	18⅞	17½	18¾	Creole Petroleum	6,974,356	$5	....	.....	....	14⅜	9⅝	12	4⅜
6⅝	4¼	1,100	6⅜	6	6¼	Darby Petroleum	509,696	$5	25c	7-15-35	.50	7½	4⅛	8	2¼
2	¾	No sales	..	..	..	Derby Oil & Refining	263,162	N.P.	....	.....	....	2¼	1	2¾	⅞
38	34	50	35	35	35	Eureka Pipe Line	50,000	$50	$1Q	5-1-35	4.00	37	30	41¾	20
74¾	50¼	2,100	68¼	67	68⅛	Gulf Oil Corp.	4,538,101	$25	....	10-1-31	....	76¾	49¾	62	24
64	44	7,800	63⅜	60	63	Humble Oil & Refining (new)	8,923,935	N.P.	25cQ	7-1-35	$1.25	496	33¼	105½	40
22½	15⅝	10,300	21¼	20¾	21⅛	Imperial Oil of Canada	26,919,871	N.P.	25cSA†‡	6-1-35	.92½	17⅛	12⅝	15⅞	6⅛
5¼	3⅝	1,100	5¼	4¾	5¼	Indiana Pipe Line	300,000	$10	15cSA	5-15-35	.35	6⅞	3⅝	8	3⅛
39¾	28	5,100	36½	35⅛	35½	International Petroleum	14,247,088	N.P.	75cSA†‡	6-1-35	2.28	33⅜	19⅜	23½	8¾
9½	4⅜	15,100	8⅞	7¾	8	Louisiana Land & Exp.	3,000,000	N.P.	....	.....	....	5	2⅛	2¼	⅛
6⅜	3½	100	5⅛	5⅛	5⅛	Lion Oil Refining	270,000	N.P.	....	10-27-30	....	6	3⅜	9½	1¼
6¼	4½	2,900	5½	5⅛	5½	Lone Star Gas	5,382,723	N.P.	15c	2-15-35	‖ .16	8⅜	4¼	11⅞	4⅜
5½	4⅛	2,200	5½	5⅛	5¼	Mountain Producers	1,682,182	$10	15cQ	7-1-35	.60	5½	4	6½	2¼
18⅛	11¾	2,900	17⅞	17½	17⅝	National Fuel Gas	3,810,183	N.P.	25cQ	7-15-35	1.00	18⅛	13⅛	20	10
9	6¾	100	8⅝	8⅝	8⅝	National Transit	509,000	$12.50	40cSA	6-15-35	.75	9½	7	10	5½
2⅝	2	1,100	2⅝	2¼	2¼	New Bradford Oil	1,445,202	$5	10cSA	3-15-35	.20	2½	1¾	2⅛	½
2⅛	1	500	1⅝	1⅝	1⅝	New Mexico and Arizona	1,000,000	$1	....	.....	....	2¾	1	1⅞	½
3⅝	3	No sales	..	..	..	New York Transit	100,000	$5	15cSO	4-15-35	.30	4¾	3	4⅞	3
7	5¼	No sales	..	..	..	Northern Pipe Line	120,000	$10	25cSA	7-1-35	.50	7	4⅝	6⅛	4¼
2⅛	1¼	18,900	2⅛	1⅞	2	Pantepec Oil	1,608,700	N.P.	....	.....	....	2⅝	⅞	3⅜	⅛
1½	⅝	200	1	1	1	Ryan Consolidated	296,931	N.P.	....	.....	....	3⅜	⅞	4¼	⅝
7½	5½	700	7⅛	6⅞	7	Salt Creek Producers	1,496,859	$10	20cQ	5-1-35	.80	7⅞	5½	9¼	3½
28⅜	21⅝	1,100	25⅞	25⅜	25½	South Penn Oil	1,200,000	$25	30cQ	6-29-35	1.20	26½	17½	22½	11
4⅜	3⅞	No sales	..	..	..	Southern Pipe Line	100,000	$10	15cSA	3-1-35	.25	5½	3½	6	2½
52½	45¼	No sales	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	$1Q	7-1-35	5.00	47	41	43	24½
21⅝	18	3,300	20¾	20¼	20¾	Standard Oil of Kentucky	2,604,790	$10	25cQ†	3-15-35	1.50	18⅜	14⅝	19¼	8⅜
12	7¾	300	10½	10	10	Standard Oil of Nebraska	188,403	$25	....	6-20-34	.50	16⅞	8¼	20½	11
19¾	11½	200	17¾	17½	17½	Standard Oil of Ohio	753,740	$25	....	1-3-33	....	28½	12¼	41	15½
1¼	⅞	3,200	1¼	1⅛	1⅛	Sunray Oil	1,610,810	$1	....	4-15-31	....	2	11/16	1½	⅜
6⅞	5	800	6	5¾	5⅞	Texon Oil & Land	936,028	N.P.	15cQ	6-29-35	.90	11	4⅜	13¾	6¼

*Ex-dividend. †Plus extras. ‡Payable in Canadian funds. §Includes 50 cents on old $25 par value stock. ‖Payable in preferred stock.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

This department is conducted in order that men connected with the drilling, producing and transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depths of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

Acidizing Where More Than One Producing Horizon Is Found

In drilling a well I got at 565 feet a show of gas which blew into a show of oil. Shut down for a week after a few feet of drilling and bailed out a half barrel of oil. At 672 feet the oil showed a different color and increased. At 695 feet we reached another oil level. All these were in lime formations, the first having very little sand, the 672-foot having more and the 695-foot having about 20 per cent sand. We are drilling deeper to a known sand around 740 feet. Do you think the 565, 672 and 695-foot levels could be acidized successfully? The well is making almost a barrel a day of Pennsylvania grade oil and is making some gas. We contemplate doing the acid job ourselves. What procedure is followed in a case like this?—N. B.

A well with several producing horizons can be acidized, but it is necessary to say that before undertaking it an operator must have a pump for building up pressure and he should be cognizant of the hazards attending the job.

In the "successive treatment of new wells," as it is called, the regular method of treatment with hydrochloric acid is used when the top pay is drilled. The well is produced for a short time and then tested.

The well then is deepened to the second pay and before treating a packer is set between the first and second pays. The perforations then are placed below the packer and the packer loaded to the surface with oil.

The well then is acidized through the tubing and after producing for a short time and giving the second pay a test, usually on the swab, the well is deepened.

When treating the third pay a packer is set between the second and third pays and the treatment is conducted as when treating the second pay. By this method it has been found possible to treat all the pays, which might have been impossible in treating the entire producing formation at one time if one of the pays were much more porous than the others.

Experts in acidation express the belief that this treating program, although more expensive and more involved, will pay for itself in some areas by opening up the entire producing horizon and giving the well every chance to produce the oil in the formation.

When using packers many operators feel it worth while to test the packer and make sure it is holding before beginning the treatment. This is done by loading the packer with oil or water and filling the tubing with oil. Pressure gauges then are placed on the tubing and on the casing. Pressure is applied to the tubing, and the packer is holding if no corresponding pressure is recorded on the casing. The tubing is swabbed until all the oil is removed and the well acidized. However, this is a poor procedure to follow unless the tubing can be swabbed down, as the fall of the acid through the oil will be very slow due to the small ratio of diameter of tubing to length.

The "regular method of treatment" has been referred to in the foregoing discussion. The regular method commonly consists first of filling the hole with oil and then introducing the hydrochloric acid down the tubing as oil is bled off from the casinghead. This bleeding is continued until the acid has reached the bottom of the tubing and risen in the hole to the top of the pay formation. The valve on the casinghead then is closed and the acid forced into the formation. The pressure created at the bottom of the hole by the liquid in the tubing and in the casing may be sufficient to force the acid back into the rock, but if necessary pressure can be applied to the fluid in the tubing by means of pumps on the acid truck.

Using Chemically Treated Mud in Dealing With Wild Gassers

I noticed that in your answer to a question about using chemicals in drilling mud you say that with certain chemical reactions in the mud high gas pressures can be controlled and that with others cavities can be filled. Do you mean that what is often called a wild gasser can be subdued by chemicals in the mud? I would like to know more about filling cavities with this treated mud. Some cavities struck by the drill are very large. Could they be filled as well as small ones? I have read of much trouble experienced in drilling through salt. Would the chemicals be of any use in salt domes?—R. R. N.

There are chemicals and types of mud that have been used with success in fighting gas, drilling salt and filling crevices. Each condition requires study of the particular situation presented. M. T. Halbouty, geologist and petroleum engineer for the Yount Lee Oil Co., Beaumont, Tex., who has made a special study of the use of chemicals in the mud to meet various drilling problems, says he has found that in fighting gas, the mud weight, viscosity and colloidal content of the mud determine the success in killing a wild gasser. This was shown definitely by the success the Yount Lee Oil Co. had in killing five gassers, two at one time, in a space of three months.

Drilling in salt has reached a point where the utmost precaution must be exercised in keeping the mud in such a condition that the overlying formations do not heave or give other trouble. Certain chemicals are added by the Yount Lee Oil Co. to the mud while a hole still is in the cap rock above the salt. These have a definite reaction when the salt is struck and drilled into, preventing the salt from eating out and killing the vital characteristics of the mud. This reaction keeps all the walls intact above the salt and prevents any of the formations from giving any trouble. This was demonstrated in a test which Yount Lee drilled at Sour Lake in which more than 3,600 feet of salt was penetrated with 2,800 feet of open hole above.

Cavities are a problem of wide variation and there are chemicals that can be added to the mud, according to Mr. Halbouty, which if properly applied can fill a cavity of virtually any size.

Thorough mixing of the chemicals and admixtures with the mud before the mud enters the hole has been found essential to successful results in combating trouble conditions. The Yount Lee Oil Co. in its work does not rely on just dumping the chemicals into the pit but it makes a practice of adding the chemicals and admixtures in the mud stream in such a manner that a complete reaction is effected before the mud reaches the mud pumps from the flow line.

Why Was It Called That?

REDBEDS

"Redbeds" is the term applied to the red formations of the Permian and sometimes to those of the Pennsylvanian age. They are so called because red is their predominant color. Ordinarily the designation is not meant to include the non-red Permian, the red Pennsylvanian nor the non-red Pennsylvanian. The non-red Permian deposits in northern Oklahoma and North Central Texas were laid down in an ocean, as the limestone of this series contains marine fossils; but some of the Permian Redbeds on the other hand appear to have been fluvial or estuarial sediments deposited during prevalence of a semiarid climate. Gypsum deposits in the Redbeds suggest that they were formed by evaporation of water in a relatively shallow basin which, temporarily at least, had some connection with the sea. The source of the material has not been determined.

Various Procedures Employed in Repairing Corroded Lines

Can you make some suggestions regarding the best method of procedure where we have found a pipe line damaged by corrosion in several areas? Some of the pipe is deeply pitted. In other places the pits amount to little. Some of the joints are leaky. We are considering spot welding for repairing pits, using patches and sleeves for the worst places. But it is a question whether to do this or put in new pipe. There is also the question as to whether it would pay to apply a protective coating before reburying the pipe. I am fairly familiar with what pipe line practice has been in such situations as this, but changes are being made right along, and I would like to know whether there have been any recent departures by pipe line companies from former methods. The matter of expense is important with us.—G. S. E.

It is needless to tell you of course that various procedures are employed in dealing with corroded pipe lines, each case requiring individual study. The following information, which it is hoped may be of help, is provided by William G. Heltzel, superintendent of the Stanolind Pipe Line Co.:

Most pipe line companies continue to repair corroded lines by electrical welding. Sleeves are used over leaking couplings. Some companies electrically weld the ends of the coupling to the pipe in case the leak is not too bad. Pits are spot welded. Patches, slabs, and half-soles are welded to the line and in some instances badly corroded pipe is encased in sleeves which are split and welded together.

Some pipe line companies provide their welders and connection foreman with pit gauges to enable the men to know within what limits spot welding of pits can be done safely. Some companies make such repairs as have been mentioned rather than replace with good pipe and apply a protective coating. In the case of a single line the patching has been resorted to rather than to incur loss of oil or damages in cutting the line.

Although these repairs will serve temporarily, pipe replacement in corrosive areas is more economical in many cases than patching, slabbing, sleeving, or spot welding. There are conditions which warrant spot welding and some patching, but when the general condition of the pipe is bad, replacement is the better way, especially since it will be necessary to return to the same place to make repairs as time goes on.

Some companies make these temporary repairs and return the pipe to the ground bare. This procedure does not seem wise. Once a corrosive area has been found, the course of the corrosion should be determined and steps taken to correct the condition. In most instances, the only remedy is the proper application of a coating.

Since the attention of the field men has been directed to the many causes of corrosion they have become more observant and corrosive areas are being found by their practical knowledge. Electrical currents on the lines are determined to show where the electrical energy is dissipated into the soil. Such places are found usually to be corrosive. Soil resistance measurements are made also to locate corrosive spots.

Rocky Mountain Area

(Continued from Page 80)

Fall River Royalty & Producers Co.'s No. 3-L, CEL NE NE Sec. 2-39-61.
Drlg. 382 ft.
Ohio Oil Co.'s No. 2 Lamb, NE NW NE Sec. 5-35-65.
Old well preparing to drill deeper from 2,952 ft.
S. & H. Dev. Co.'s No. 1-A Olinger, SE NE NW Sec. 1-36-63.
T.D. 1,460 ft., underreaming 5-in. at 1,416 ft.

PARK COUNTY

George T. Beck's No. 1 fee, NW SE NW Sec. 27-53-101.
Resuming at 1,181 ft.
Continental Oil Co.'s No. 3 Northern Pacific, NW SE SE Sec. 23-58-98.
Drlg. 1,036 ft. in shale, 12½-in. at 240 ft.
Garland Oil Co.'s No. 2 Government, SE NE NW Sec. 14-56-98.
S.D. 2,166 ft.
Resolute Oil Co.'s No. 1 State, C NW SW Sec. 16-57-101.
S.D. 3,608 ft.
Texas Co.'s No. 2 Ora Sonners, 660 ft. N of S line and 590 ft. W of E line, NE NW Sec. 29-51-100.
Completed at 3,501 ft.; not tested.; rigging up pump. equip.

SHERIDAN COUNTY

Beaver Creek Oil Syndicate's No. 1 Allison, SW SE Sec. 15-55-85.
S.D. 2,660 ft.
Texas Co.'s No. 7-J., SW SW SE Sec. 34-27-113.
Location.

SUBLET COUNTY

Piney-La Barge Oil Co.'s No. 2 Government, CEL NE NW Sec. 18-28-113.
Drlg. below 520 ft.

SWEETWATER COUNTY

Vermillion Oil Co.'s No. 1 State, SW cor. Sec. 16-12n-99.
S.D. 4,685 ft.
Wyoming-California Pet. Co.'s No. 1 Government, SE cor. Sec. 20-16-104.
Location.

WASHAKIE COUNTY

C. L. Brome et al's No. 3 Government, SW NW NW Sec. 31-48-90.
Drlg. 1,136 ft.
Chris Oil Syndicate's No. 1 Government, C SW SW Sec. 31-48-90.
T.D. 1,830 ft.; fshg. for tools.
Wyoming Oil & Ref. Co.'s No. 1 Frison, NW SW NW Sec. 14-48-91.
T.D. 1,700 ft.; underrmg. 8¼-in. from 1,420 ft. to bottom.

Weston County

May production in the Osage Field was 20,527.34 bbls. and deliveries to refineries totaled 24,172.91 bbls.

Len Thorson, 19-year-old tool dresser employed by the Osage Oil Trust, was drowned when he attempted to ford Beaver Creek at the water level bridge. This ford is the only communication between the two sides of the field. The boy was a brother of Harry T. Thorson, superintendent for Osage Oil Trust.

One new location was reported in Updike Brothers' No. 5, CEL NE SW Section 25-46-64, which is drilling at 100 feet.

WESTON COUNTY

Conway Oil Corp.'s No. 1 Government, C SE NW Sec. 7-41-60.
Drlg. 1,187 ft. 10-in. at 1,102 ft.
Carl Cundy's No. 9 Government, NW cor. NE Sec. 31-46-63.
Drlg. 170 ft.
Des Moines-Osage Syndicate's No. 1 Thierry, NW NW SW Sec. 32-46-63.
Drlg. 300 ft.
Chas. Goodell et al's No. 1 State, C NE NE Sec. 23-44-63.
Spudding.
(Formerly Gibson Oil Synd.)
La Lleishe Oil Co.'s No. 18 fee, C SW SW Sec. 17-46-63.
S.D. 360 ft. for casing.
Updike Brothers' No. 5, CEL NE SW Sec. 25-46-64.
Drlg. 100 ft.

MONTANA

R. P. Jackson, secretary of the Oil Conservation Board of Montana, has addressed a letter to all producers, transporters and refiners in Montana stating that the decision of the Supreme Court in the Schecter Poultry case does not in any way directly affect the regulation of crude oil production, transportation and storage by state agencies to the extent authorized by the laws of the various states.

BIG HORN COUNTY

Enterprise Oil Co. et al's No. 2 Lynde, SW SW SE Sec. 21-6s-35e.
T.D. 2,590 ft.; cleaning out 50 ft. off bottom.
Bailey Round Butte Oil Co.'s No. 1, 1,120 ft. W of E line and 2,140 ft. N of S line, Sec. 3-6s-23.
Spud. April 25, set 8¼-in. at 88 ft.; 6⅝-in. at 386 ft.; and drlg. at 725 ft.

CARBON COUNTY

Ohio Oil Co.'s No. 15 Montana Industrial, C NE NE Sec. 11-7s-21.
Drlg. 2,933 ft. in shale.

Cascade County

Ralph Chamberlain and others' No. 1 Heldman, near C SE Section 6-19-2w, Crown Butte area, topped the Madison at 2,518 feet, and was drilled to 2,518 feet where it was abandoned with a hole full of water.

CHOTEAU COUNTY

Mills & Decker's No. 1, NE NW Sec. 29-27n-13e.
Spudding.

FERGUS COUNTY

Button Butte O. & G. Co.'s No. 1 Woodward, SE SE SW Sec. 20-14n-24.
Drlg. 3,095 ft.
Emmons et al's No. 1, 220 ft. W of E line and 2,140 ft. N of S line, Sec. 6-20-18.
Spud. May 12; water in Eagle sand topped at 258 ft., set 12½-in. at 450 ft. and drlg. at 465 ft.
S. W. Pennock et al's No. 1 Nordheim, NW NE NE Sec. 6-21n-18e.
S.D. 480 ft. (cor.).

GALLATIN COUNTY

Montana Gas & Pet. Corp.'s No. 1 Adams, SE SE SE Sec. 36-2n-1e.
Drlg. 1,421 ft.
Ben W. Ryan's No. 1 Tice, NE NE NE Sec. 28-1n-2e.
Drlg. 1,801 ft.

Glacier County

One completion and two new locations were reported in the Cut Bank Field.

Santa Rita Oil & Gas Co.'s No. 5 Whetstone, C Lot 3 (NE SE) Section 22-35-6w, swabbed 170 bbls. the first 24 hours at a total depth of 2,875 feet. It made 96 bbls. the next 16 hours. The upper Cut Bank was at 2,775-2,800 feet and the lower Cut Bank at 2,860-67 feet. It had a show of gas at 1,603-10 feet.

One of the new locations is the Santa Rita Oil & Gas Co.'s No. 1 State, C NW SW Section 21-33-5w, a north offset to the Texas Co.'s No. 1 Scheuren, and the other is Montana Power Gas Co.'s No. 2 Heiland Unit, NE SW SE Section 27-36-5w. The last named is in the gas area and not far from its No. 1 Heiland Unit, which is being completed as a small oil well after failing to get the gas.

Askins' No. 1 Askins, Lot 24, Blk. 33, Sec. 12-33-6w.
S.D. 2,700 ft. Will start sidetracking at 2,021 ft.
C. P. Castle's No. 2 State, 600 ft. N of S line and 1,320 ft. E of W line, Sec. 36-35-6w.
Rig.
A. B. Cobb's No. 1 Young, C SE NE Sec. 5-32-5w.
Rigging.
Consolidated Gas Co.'s No. 5 Tribal, Lot 5, Sec. 3-34-6w.
Running 8¼-in. at 2,737 (cor.) ft.
Consolidated Gas Co.'s No. 1 Arnold-State, C SW NE Sec. 26-35-6w.
Rigging.
Consolidated Gas Co.'s No. 6 Tribal, C SW SW Sec. 10-34-6w.
T.D. 3,005 ft.; preparing to swab.
Dakota-Montana Oil Co.'s No. 3 Winkler, 440 ft. S of N line and 590 ft. E of W line, Sec. 26-35-6w.
Set 10-in. at 540 ft. with 50 sacks.
Gardner-Smith's No. 1 Tweedy, Lot 1, NE NE Sec. 36-33-6w.
Running 6¼-in. at 2,835 ft.
L. R. Hannah, tr.'s No. 1 State, Lot 5, Blk. 4, Sec. 12-33-6w.
Drlg. in at 2,890 ft.
R. C. Jeffries' No. 1 Bakke, C NW NE Sec. 32-34-5w.
Rig on location.
R. C. Jeffries' No. 2 Lukens, NE cor. Sec. 12-33-6w.
Drlg. 2,810 ft.
Kately-Drumheller's No. 2 Ward, SE NE Sec. 10-34-6w.
Drlg. 2,690 ft.
Kately's No. 1 Thronson, SW NW SW Sec. 25-35-6w.
Drlg. 1,710 ft.
Montana Power Gas Co.'s No. 1 Bonnett, C SE NW Sec. 4-32-5w.
Drlg. 2,225 ft.
Montana Power Gas Co.'s No. 1 G. Carrigeaux, C SE NW Sec. 28-33-5w.
Rig.
Montana Power Gas Co.'s No. 1 Heiland Unit, NW SE NW Sec. 27-36-5w.
T.D. 2,862 ft.; 550 ft. of oil at 2,820-35 ft.
Montana Power Gas Co.'s No. 2 Heiland Unit, NE SW SE Sec. 27-36-5w.
Rigging.
Montana Power Gas Co.'s No. 1 Lookhoff, C SW SE Sec. 28-33-5w.
Drlg. 2,905 ft.
Nadeau Bros.' No. 2 Coover, C NE NE Sec. 17-33-5w.
Drlg. 2,851 ft.; show oil at 2,835 ft. where it cmtd. 6⅝-in.
Nadeau Bros.' No. 4 Van de Mar, C SW NE Sec. 35-35-6w.
Show of oil at 2,835 ft.; running 7-in.
Par Oil Co.'s No. 5 Haines, C SW SE Sec. 2-34-6w.
Drlg. 420 ft.
Santa Rita O. & G. Co.'s No. 1 Government, C NE SW Sec. 4-32-5w.
Drlg. 1,860 ft.
Santa Rita O. & G. Co.'s No. 1 McCabe, C NW SW Sec. 28-33-5w.
Drlg. 2,180 (cor.) ft.
Santa Rita O. & G. Co.'s No. 1 Ritchie, C NW SW Sec. 5-33-5w.
Drlg. 2,757 ft.; 6⅝-in. at 2,715 ft.
Santa Rita O. & G. Co.'s No. 2 Ritchie, C NE NE Sec. 6-33-5w.
Set 6⅝-in. at 2,753 ft.
Santa Rita O. & G. Co.'s No. 1 Fisk, C SW SE Sec. 14-35-6w.
Drlg. 2,075 ft.
Santa Rita O. & G. Co.'s No. 1 State, C NW SW Sec. 21-33-5w.
Location.
Santa Rita O. & G. Co.'s No. 1 Tribal, C SW NW Sec. 15-35-6w.
Rigging.
Santa Rita O. & G. Co.'s No. 1 Whitehead, C SW SE Sec. 23-35-6w.
Location.
Steele Creek Producers, Inc.'s No. 2 Carman, C SW NW Sec. 19-34-5w.
T.D. 2,835 ft.; prep. to swab.
R. C. Tarrant's No. 2 Getty, NW NW SE Sec. 2-34-6w.
S.D. 2,700 ft.
R. C. Tarrant's No. 4 Britton, C SW SW Sec. 12-34-6w.
Rig on location.
R. C. Tarrant's No. 6 Haglund, Jr., C SE NW Sec. 13-34-6w.
Rig on location.
R. C. Tarrant's No. 1 O'Brien, C SE SW Sec. 29-34-5w.
Spudding at 290 ft.
R. C. Tarrant's No. 2 McClellan, C NW SE Sec. 12-34-6w.
Rig on location; (formerly No. 1 fee).
R. C. Tarrant's No. 1 Ruetten-Wold, C NW NE Sec. 13-34-6w.
Drlg. 2,200 ft.
Texas Co.'s No. 1 Aarronson et al, C N½ SE Sec. 21-35-6w.
Drlg. in at 3,010 ft.; 7-in. at 2,996 ft.
Texas Co.'s No. 1 Marie Hagerty, C SE NE Sec. 9-34-6w.
Drlg. 2,485 ft.

Liberty County

J. H. Hamilton and others' No. 1 Northern Farms, C NE SW Section 10-37-5e, on the Flat Coullee structure, near the Canadian boundary and 60 miles east of the Cut Bank Field, the discovery well, which was reported last week bailing 60 bbls. in 12 hours, has not yet been completed and given a production test. It found the sand at 2,803-79 feet and it was saturated to the bottom. It is supposed to be the equivalent of the Cut Bank producing horizon. The 8¼-inch was set at 2,616 feet and the 6¼-inch at 2,778 feet. Rods and tubing were run and while under agitation it slopped over the top. It then sanded up and rods were pulled to clean out. It topped the Colorado at 620 feet.

John Wilde's No. 2-A Mahoney, W SE SW Sec. 23-37-4e.
Drlg. 1,360 ft.

PETROLEUM COUNTY

Hardendorf & Keyes' No. 1 Austed, SW NW SE Sec. 22-13n-28e.
Spudding with cable tools.

PHILLIPS COUNTY

Little Rocky Dev. Co.'s No. 1, SE SE SE Sec. 17-24-24.
S.D. to finance.

Pondera County

The Texas Co. staked a location the past week for a test 5 miles southeast of the nearest producer in the Cut Bank Field in its No. 1 Unit 5, C SW SW Section 3-30-5w, in the Valier area across the river from the Cut Bank operations. The company has a large block in that district on which it recently completed the unitization into five units. The location for the first test was based on the results of coredrilling operations to work out the old shore line along which the Cut Bank production is found.

ROSEBUD COUNTY

Birney O. & G. Co.'s No. 1, SW SW SW Sec. 7-6s-43e.
Drlg. below 325 ft.

TOOLE COUNTY

Crumley & Son's No. 2 Fryberger, C NE NE Sec. 24-35-1w.
Drlg. 1,000 ft.
A. E. Crumley's No. 5 Shaw, NW SE SW Sec. 35-36-2w.
T.D. 1,830 ft.; top of Madison at 1,799 ft. had show of oil; acidizing.
E. B. Coolidge's No. 1 Shaw, SW SE NE Sec. 35-36-2w.
Drlg. 550 ft.
P. L. Eddy's No. 5 Seabrook, NE SW SW Sec. 19-35-2w.
Location.
Fraser & Kluth's No. 1 Severance, C SE NE Sec. 29-32-2e.
U.R. 8¼-in. to set at 1,980 ft. for wtr. shutoff.
Graham Oil Co.'s No. 2 McDonald, E SE SW Sec. 19-35-2w.
Rigging up.
Imperial Oil Co.'s No. 5 Craig, C NE NE Sec. 19-35-1w.
Fshg. at 1,020 ft.
T. P. Kyle's No. 1 Clark, SW SW SE Sec. 19-37n-1e.
Resuming at 1,010 ft.
Monopeg Oils, Ltd.'s No. 3 Dipple, S SW NW Sec. 28-35-1w.
Fishing at 1,355 ft.
Mon-Tex Pet. Co.'s No. 1 fee, SE NW Sec. 27-34-1w.
Rigging.
Nepstead-Vanderpas' No. 19 Government, SE NW Sec. 32-35-2w.
Location.
New Era Fuel Co.'s No. 7 Lorensen, CNL NW NE Sec. 27-35-2w.
Set 6¼-in. at 1,538 ft.
C. T. Olen's No. 1 Engermoen, SW SW NW Sec. 14-35-2w.
Drlg. 700 ft.
E. O. Reickhoff's No. 2 Government, SW SW NE Sec. 3-35-3w.
S.D. 300 ft.
Pfabe & Engleking's No. 8 Seabrook, SE SW SE Sec. 19-35-2w.
Small well at 1,519-29 ft.; will acidize.
C. Leonard Smith's No. 1 Eckhoff, C SE Sec. 6-33n-2e.
S.D. 575 ft. for new boiler.
C. Leonard Smith's No. 1 Federal Land Bank, C NE SE Sec. 11-33n-1e.
Spudding at 175 ft.
C. Leonard Smith's No. 1 I. Halverson, C NE SE Sec. 18-33n-2e.
Spudding at 125 ft.
C. Leonard Smith's No. 1 H. Halverson, NW NE Sec. 18-33n-2e.
Rigging light rotary at 250 ft.
Texas Co.'s No. 9 Bruins, C SE Sec. 9-35-2w.
T.D. 1,637 ft.; 300 ft. of oil in hole; prep. to acidize; 8¼-in. at 1,034 ft.

UTAH

UTAH COUNTY

Diamond Oil Co.'s No. 4 Government, CSL SE NW Sec. 16-8s-5e.
Drlg. at 3,735 ft. and showing considerable gas.

WASHINGTON COUNTY

Arrowhead Pet. Co.'s No. 2 Escalante, NW NW NE Sec. 19-43-15.
T.D. 4,114 ft.; plugged back to 3,250 ft., shot and cleaning out.
Arrowhead Pet. Co.'s No. 1-A, SE SW NE Sec. 1-43-15.
Drlg. 1,400 ft.

Moisture in Natural Gas

(Continued from Page 34)

sulphuric acid, glycerine, or aqueous solutions of calcium chloride.

4. Adsorption drying agents which hold water by capillary phenomena, such as silica gel or charcoal.

The class of drying agents that is most suited for dehumidifying purposes will depend upon local conditions. The following considerations are of importance in determining the most suitable drying agent:[5]

1. Cost of the drying agent per pound of moisture removed from the gas.
2. Cost of regeneration per pound of moisture removed.
3. Simplicity of apparatus installation and maintenance of same.
4. Speed of dehydration.

Drying Agents

The comparative efficiencies of the more common drying agents together with some newer drying material recently introduced has been determined by Bower.[3] The following table was prepared from his data:

RESIDUAL WATER

Pounds per Million Cubic Feet Water Left in Gas After Treating	
Copper sulphate, anhydrous	174.80
Calcium chloride, granular	83.65
Calcium chloride, anhydrous, technical	78.04
Zinc chloride, sticks	61.18
Barium perchlorate, anhydrous (Dessicchlora)	51.19
Sodium hydroxide, sticks	49.94
Calcium chloride, anhydrous	22.47
Magnesium - perchlorate - trihydrate (Dehydrite)	1.94
Silica gel	1.87
Potassium hydroxide, sticks	0.87
Aluminum trioxide (Hydralo)	0.31
Calcium sulphate, anhydrous (Anhydrite)	0.31
Calcium oxide	0.19
Magnesium perchlorate, anhydrous (Anhydrone)	0.12
Barium oxide	0.04

Hawes and Wadsworth[5] mention that, in England, two solutions only, for reasons of cheapness and anticorrosive properties, hold the field for dehumidification. These are solutions of calcium chloride in water and solutions of glycerine in water. The essential features of either the glycerine or the calcium chloride brine process are about the same except that the concentration of the diluted glycerine must be carried out under reduced pressure. Smith[6] states that if the glycerine contains much less than 15 per cent water it becomes too viscous and there is excessive frothing with gas. When dehumidifying high pressure natural gas, this frothing condition would undoubtedly be intensified at the point where the pressure was vented from the glycerine solution just prior to its concentration at reduced pressure. The usefulness of calcium chloride solutions is limited by its solubility. It is not practical to work with a saturated solution especially in cold weather because a slight lowering in

temperature is likely to result in solidification of the fluid. A 40 per cent calcium chloride solution should be equivalent to 82 per cent glycerine as far as vapor pressure considerations are concerned.

A combination of glycerine with aqueous calcium chloride has been used.[3] In this process, it is claimed that by adding glycerine to an aqueous solution of calcium chloride, solutions far beyond the saturation point can readily be procured. When cooled, any excess of the crystallizable salt crystallizes in a finely divided form such that it is readily maintained in suspension in the solution and can be pumped or distributed the same as any ordinary liquid.

Dehumidifying

Klaiber's[7] process for dehumidifying gas combines refrigeration with a concentrated brine solution so that the combined effect of the differences in vapor pressures and in temperatures between the gas and the brine solution is to reduce the dewpoint of the gas to the desired temperature.

Sperr's[10] process for dehumifying gas consists in compressing the gas, cooling it, and treating it while cool and under compression with a hygroscopic agent such as calcium chloride brine.

The two-stage dehumidifying process of Sperr[11] comprises treating the gas with a continuously circulating solution such as calcium chloride brine to remove the major portion of water, followed by a second treatment of the gas with a hygroscopic material such as calcium chloride in solid form. Both the solution and the solid are regenerated.

The use of silica gell as a commercial dehumidifying agent has been recently investigated.[12, 13] The efficiency of silica gel is very high as may be noted in the above table. It may be reactivated by heating the gel or by passing a current of heated and dry gas through the material. The adsorption class of drying agents to which silica gel belongs will also remove gasoline and oil vapors from the gas.

The greater part of this paper has been concerned with the disadvantages of moisture when present in a liquid state. There is, however, one serious disadvantage that may arise if there is no liquid present. The condensed moisture along with small amounts of oil on the walls of the pipe line act as a trap to catch loose particles of dust that are carried along by the flowing gas. In some cases the gas may be effectually cleaned in this manner. If the moisture is now removed from the pipe walls by partial dehydration of the gas, the previously trapped dust becomes dry and is again carried along by the flowing gas.

A typical analysis of some loose dust is as follows:

	Weight %
Moisture	2.4
Oil	2.7
Dry Basis (Oil and Water Free)	
Silica	1.6
Ferrous iron	10.2
Metallic iron	1.7
Total iron	61.1
Sulphur	nil
Chlorides	nil
Probable Combination	
Moisture	2.4
Oil	2.7
Silica	1.6
Ferrous hydroxide	16.5
Ferric oxide	76.3
Metallic iron	1.7
Unaccounted for	4.8
Total	100.0
Sieve Test	
Passes less than 100 mesh	8.8
Between 80 and 100 mesh	15.4
Between 60 and 80 mesh	48.7
Between 40 and 60 mesh	22.2
Between 20 and 40 mesh	9.5
Greater than 20 mesh	3.4
Total	188.6

This suspended dust must be removed from the system in order to prevent excessive wear on compressor cylinders. The finely divided dust will also plug small valves, orifices such as in heating stoves, domestic meters, etc. The usual method of removing this dust in high-pressure transportation systems is by means of an oil bath type of dust scrubber. The installation of dust scrubbers is found to be practical in many cases even though the moisture content of the gas is not controlled by partial dehydration. There are usually certain periods of time (especially during the warm weather season) when the operating conditions of a normally "wet" line are such that portions of the line become temporarily dry enough to allow some dust to become loosened and to travel along the line.

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PROSPECTING IN CHINA

Oil prospecting in northern Shensi has brought good results, according to the National Geological Survey of China. Of five holes drilled, one is producing about 10 bbls. and one about 20 bbls. Exploration will be carried on at Szechuan.

Oklahoma Wildcats

(Continued from Page 72)

KIOWA COUNTY

Rajah Oil Co.'s No. 3 Stone, C SE NE Sec. 34-7-17w.
Gas 933-34 ft.; oil 944-82 ft.; recmtd. csg.; T.D. 1,040 ft.

LEFLORE COUNTY

McCraw et al's No. 1 Tidwell, C NW SE Sec. 17-3-22.
Rigging up machine.

LINCOLN COUNTY

Carter Oil Co. et al's No. 1 McFarland C-34, SW SW NE Sec. 18-13-4.
Wilcox sands at 5,279 ft. and 5,335 ft.; T.D. 5,345 ft.; will make Schlumberger test.

Chester L. Carlock's No. 1 Young, C N½ NW NW Sec. 23-15-5.
R.U. rotary.

Mid-Continent Pet. Corp. et al's No. 1 Nunn, SE SE NW Sec. 25-15-1.
Hunton 5,020 ft.; Sylvan 5,135 ft.; Viola 5,124 ft.; T.D. 5,323 ft.

Chas. Ralph's No. 1 Young, C N½ NW NW Sec. 23-15-5.
Spudded and S.D.

Stanolind O. & G. Co. and Amerada Pet. Corp.'s No. 1 Cavanaugh, SE NE Sec. 31-15-5.
T.D. 3,661 ft.; show of oil and 2,500 ft. of wtr. in hole; P.B. to 3,550 ft.; drilled to 3,570 ft.; P.B. to 3,562 ft.

Texas Co.'s No. 1 Niccum, SE SW NW Sec. 24-14-5.
Prue sand 3,565 ft.; show of gas 3,578-84 ft.

LOGAN COUNTY

Freeland et al's No. 1 Scrutchfield, NW NW NE Sec. 9-16-1e.
Cellar.

Houghton Royalty Co.'s No. 1 Townsite, SW SW SE Sec. 13-17-1w.
Bldg. rig.

Sinclair Prairie and Slick Urschel's No. 1 Koatsch, SW cor. Sec. 22-15-2w.
Second Wilcox 6,322 ft.; T.D. 6,341 ft.; cored 6,341-43 ft.; 4,000 ft. salt water in hole; will try to cement off.

Slick-Urschel et al's No. 1 Pennington, C SW NE Sec. 16-16-1w.
Simpson dolomite 5,534 ft.; Wilcox 5,581 ft.; no show; lost circulation at 5,587 ft.

Stanolind O. & G. Co. et al's No. 1 Nunn, SE NW Sec. 25-15-1.
Drlg. 2,597 ft.

MAJOR COUNTY

Indian Territory Illuminating Oil Co. and Continental Oil Co.'s No. 1 Fairview, C E½ SW SE Sec. 32-22-14w.
Drlg. 3,420 ft.

NOBLE COUNTY

Marathon Oil Co.'s No. 1 Gilbert, NE cor. Sec. 24-23-2.
Wilcox sand 4,449 ft.; T.D. 4,480 ft.; flowed 1,793 bbls. in 7 days; may deepen.

OKFUSKEE COUNTY

Amerada Pet. Corp.'s No. 1 Jaynes, NW NW SW Sec. 26-16-10.
Hunton 2,696 ft.; 10,000,000 ft. of gas at 3,704 ft.; Wilcox sand 3,932 ft.; T.D. 4,-025 ft.; 275 ft. wtr. in hole; P.B. to 3,-883 ft.

Olean Pet. Co.'s No. 3 Fish, SE NE NW Sec. 36-16-10 (Wilcox sand test).
Wilcox sand 2,942-61 ft.; shot with 5 qts.; 25 bbls. oil and 53 bbls. wtr.; completed.

Wilcox O. & G. Co.'s No. 1 Connelly, SE NE SE Sec. 25-14-2e.
Location.

OKLAHOMA COUNTY

Gypsy Oil Co. and Indian Territory Illuminating Oil Co.'s No. 1 Salisbury, NW NE NE Sec. 13-14-4w.
Drlg. 1,120 ft.

Sinclair Prairie O. & G. Co.'s No. 1 Corbett, NE NW NE Sec. 17-13-3w.
Oswego lime 6,090 ft.; drlg. 6,395 ft.

Slick-Urschel Oil Co. et al's No. 1 Owen, SE cor. Sec. 19-13-3w.
Simpson 6,558 ft.; T.D. 6,720 ft.; 250 bbls. oil, 5,000,000 ft. of gas; will deepen.

OSAGE COUNTY

J. A. Freeberg et al's No. 1, NE cor. SE Sec. 1-25-6.
Location.

PAWNEE COUNTY

Stanolind O. & G. Co.'s No. 1 Shunatana, NE SW SE Sec. 32-22-8.
Rig.

Trees Oil Co.'s No. 1 Susan Wedd, C SE SE Sec. 27-24-6.
Dry and abd. 3,295 ft.; top of Mississippi lime 3,137 ft.

PITTSBURG COUNTY

Choctaw Gas Co.'s No. 1 Bunyard, SE SE NE Sec. 18-7-18.
Drlg. 1,305 ft.

McAllister Pet. Corp. et al's No. 1 Chunn, C SE NW Sec. 29-4-14.
T.D. 1,530 ft.; pipe collapsed; S.D.

P. H. Gray et al's No. 1 Lee, NW SE Sec. 12-5-12.
T.D. 1,210 ft.; fishing tools; S.D.

PONTOTOC COUNTY

E. M. Blanchard's No. 1 Crabtree, NE SE NE Sec. 27-3-6.
S.D. 2,920 ft.

Philip Boyle's No. 1 McCracken, NE NW NW Sec. 31-5-4.
Hole full black oil 2,160 ft.; H.F.W. 2,-170 ft.; recmtd.

Charles E. Carter's No. 1 Wood, NW SW SE Sec. 5-4-3.
S.D. 2,070 ft.

Continental Oil Co.'s No. 1 McCarty, C SW NW Sec. 12-1-7e.
Location.

Crabb-Craw Oil Co.'s No. 1-A Breco, SE NE SW Sec. 3-4-6.
Sand 1,106-18 ft.; pumped 10 bbls. in 24 hrs.; S.D.

W. A. Delaney et al's No. 1 Fulsome, SE NE Sec. 35-4-6.
Location.

Fleetborn Oil Corp.'s No. 2 Oliver (twin), 280 ft. S and 1,040 ft. E of C Sec. 21-4-5. Gas at 848-55 ft.; wtr. at 938 ft., T.D.; fishing.

Mudge O. & G. Co.'s No. 1 Clampett, SW NW NW Sec. 10-2-6.
S.D. 915 ft.

Gillette & Kroeger's No. 1 Duver, NW SE Sec. 36-1n-6e.
S.D. 1,300 ft.

Southern Oil Co.'s No. 1 Walker, NW NW SW Sec. 11-4-6.
Drlg. 1,485 ft.

Leonard Williams et al's No. 1 Breedon, NW cor. Sec. 6-2-5.
Spudded and S.D.

PUSHMATAHA COUNTY

Ungerman et al's No. 1 Misser, SE SW SW Sec. 35-3s-15e.
T.D. 3,196 ft.; waiting for fuel.

SEMINOLE COUNTY

L. Cooper's No. 1 Chandler, NE SE SW Sec. 4-5-6.
S.D. 1,780 ft.

Ray Dorris and J. T. Hall's No. 1 Dorris, SE SE SW Sec. 31-10-7.
Sand 520-40 ft.; H.F.W.; S.D. 608 ft.

Verser & Clay et al's No. 1 Thomas, NE SE NW Sec. 1-6-6.
S.D. at 2,802 ft.

Tom Phillips et al's No. 1 Abbott, NE cor. Sec. 33-8-7.
Drlg. Mayes lime at 2,775 ft.

TEXAS COUNTY

Ben F. Ash et al's No. 1 Guymon townsite, C NE SE Sec. 30-3n-15w (Cimarron Meridian).
T.D. 2,420 ft.; rig blown down; abd.

WASHITA COUNTY

Okla.-Midwestern Oil Co.'s No. 1 Dock, SW cor. Sec. 21-8-18w.
T.D. 2,430 ft.; lost tools in hole; rig rebuilt; S.D.

L. P. McWhirter's No. 1 fee, SW cor. Sec. 34-8n-19w.
Drlg. 520 ft.

SOUTHERN OKLAHOMA

ATOKA COUNTY

Amerada Pet. Corp., Stanolind O. & G. Co., et al's No. 1 Travelers Life Ins. Co., SW NW SE Sec. 28-1s-9e.
Location.

Clark et al's No. 1 Morrison, SE cor. Sec. 32-1-14.
S.D. 200 ft.

Claro et al's No. 1 Bass, 510 ft. N and 1,170 ft. E of C Sec. 9-1s-14e.
Fishing 1,250 ft.

Keaton et al's No. 1-A Roland, NE cor. NW NE NE Sec. 16-2s-10e.
T.D. 850 ft. (corrected); lime at 800-47 ft.; will treat.

Malernee et al's No. 1 D. O. K. Land Co., C SE SE Sec. 36-2s-13.
S.D. 2,115 ft.

R. H. Pierce et al's No. 1 Aetna Life Ins. Co., NW SW NE Sec. 10-1n-13e.
R.U. standard tools.

H. W. Sears et al's No. 1 Downing, SE NW Sec. 17-1s-14.
Moving in tools.

BRYAN COUNTY

Welch Oil Corp.'s No. 1 Collins, NE NE Sec. 19-8s-8e.
T.D. 570 ft.; C.O. 540 ft.

J. D. Parks' No. 1 Coats, SE NE SW Sec. 1-5s-8e.
Machine.

Trio Oil Co.'s No. 1 Gilbert, SW NE SW Sec. 25-5s-7.
Drlg. 712 ft.

CARTER COUNTY

Bland et al's No. 1 Center, NE cor. Sec. 6-4s-2e.
Rigged up.

Waco Turner's No. 1 Munson, NE NW NE Sec. 35-4s-2w.
T.D. 4,156 ft.; waiting for wtr.

Carter Oil Co.'s No. 1 Carter-Williams, SW NE SW Sec. 27-2s-3w (7,000-ft. test).
Drlg. 6,229 ft.

Paul Robb's No. 1 Burton, 660 ft. N and 185 ft. W of C Sec. 31-1s-2w.
Location.

CHOCTAW COUNTY

Burns et al's No. 1 Hallum, NE NW NW Sec. 4-7s-20.
Spudded and S.D.

COMANCHE COUNTY

H. W. Baker's No. 1 Miller, SE SW SE NE Sec. 22-2-13w.
S.D. 120 ft.

R. E. Carson's No. 1 Barber, NE NE SE Sec. 9-1n-11w.
S.D. 500 ft.

Oscar Jones' No. 1-A Sheets, NE SW Sec. 26-3-10w.
Machine.

F. F. Stevens' No. 1 Green, SE SW Sec. 2-1-13w.
Drlg. 1,690 ft.

JACKSON COUNTY

Associated Oil Co.'s No. 1 Harrell, NE NE SE Sec. 13-1s-21w.
S.D. 875 ft.; red beds.

J. G. Buel et al's No. 1 Kizziar, SE SE NE Sec. 2-2n-22w.
Drlg. 2,210 ft.

Burke-Greis Oil Co.'s No. 1 Millbrant, SW NW SW Sec. 31-3-19w.
Drlg. 1,235 ft.

Dengail Oil & Gas Co.'s No. 1 Robinson, SE SE NE Sec. 32-1s-22w.
Building rig.

Gypsy Oil Co.'s No. 1 Boucher, NW SW SW Sec. 32-1-19w.
Drlg. 2,147 ft.; 1,800 ft. wtr. in hole.

Gypsy Oil Co.'s No. 1 Stokes, SE NW SW Sec. 11-1-20w.
Lime 1,709-11 ft.; T.D. 1,722 ft.; S.D.

Loper et al's No. 1 Conrad, NE cor. Sec. 35-1s-19w.
Dry and abd. 1,737 ft.

Marshall & Burnham's No. 1 Hess, NE SW NE Sec. 27-1s-20w.
T.D. 1,737 ft.; S.D.

Palo Duro Oil Co.'s No. 1 Ealum, SW SW SE Sec. 16-2-21w.
Drlg. 1,270 ft.

Robberson & Suppes' No. 1 Walker, SW cor. Sec. 19-4-20w.
Top of granite 1,210 ft.; S.D. 1,216 ft.

Selby O. & G. Co.'s No. 1 Mack, NW cor. NW SW Sec. 5-2n-20w.
Dry and abd. 1,855 ft.

Triangle Oil Co.'s No. 1 Fox, E½ W½ NW Sec. 11-3n-20w.
Drlg. 325 ft.

Whatley & Whatley's No. 1 Holt, NW SW SE Sec. 20-1n-20w.
S.D. 1,430 ft.

JEFFERSON COUNTY

Gypsy Oil Co.'s No. 1 James, SW SE SE Sec. 30-4s-6w.
Drlg. 2,102 ft.

Ben H. Levy et al's No. 1 Ryan, NW cor. Sec. 16-4s-6w.
Gas showing 1,346-47 ft.

JOHNSTON COUNTY

W. A. Delaney et al's No. 1 Diamond, NW NE SE Sec. 5-1s-8.
Drlg. 2,100 ft.

Schermerhorn Oil Co.'s No. 1 Rich, SW SE SE Sec. 35-4s-4e.
Drlg. 1,750 ft.

LEFLORE COUNTY

McCraw et al's No. 1 Tidwell, C NW SE Sec. 17-3-22.
Rig on ground.

MARSHALL COUNTY

Jess Cook et al's No. 1 May, NE NW NW Sec. 13-8s-5.
Drlg. 75 ft.

Paul Robb's No. 1 Vittetoe, C NE SE Sec. 11-5s-4e.
Top Sylvan shale 5,405 ft.; T.D. 5,461 ft.; S.D.

MURRAY COUNTY

Equitable O. & G. Co.'s No. 1 Ferguson, NE NE SW Sec. 36-1s-3.
Base of Tully lime 1,005 ft.; set 10-in. csg. 1,071 ft.; drlg. 1,080 ft.

Hornaby & Jones' No. 1 Sadler, NE NE NW Sec. 20-1-2.
Location.

STEPHENS COUNTY

Wm. Angle et al's No. 1 Cooper, NE NW NW Sec. 23-2-7w.
Drlg. 3,440 ft.

Geo. Pace et al's No. 1 Daily, NE NE NE Sec. 26-1n-8w.
Drlg. 2,990 ft.

TILLMAN COUNTY

J. G. Buell et al's No. 1 Haught, SE NE Sec. 22-1-16w.
Drlg. 828 ft.

Rock Island Ref. Co.'s No. 1 Lynch, C SE SW Sec. 35-1s-16w.
Drlg. 705 ft.

Loper et al's No. 1 Conrad, NE cor. Sec. 35-1s-19w.
Drlg. in brown shale, 1,660 ft.

La.-Ark. Wildcats

(Continued from Page 48)

660 ft. S, 300 ft. W, NE cor. Sec. 56-21-21e.
Lubricating stuck D.S. 2,541 ft.

O. G. Collins' No. 1 H. L. Hunt, approx. center of Sec. 26-22-13e.
S.D. 3,303 ft.

JACKSON COUNTY

American Liberty Oil Co.'s No. 1 Lusk, C NE NE Sec. 1-16-1w.
Rigging up.

LA SALLE PARISH

H. L. Hunt, Inc.'s No. 1-A King, 225 ft. S. 210 ft. E, NW cor. NE NW Sec. 36-10-1e.
Set 6-in. 1,524 ft.

MADISON PARISH

San. Land & Exploration Co.'s No. 1 Delta Land Co., Sec. 1-17-12e.
S.D. 280 ft.

MOREHOUSE PARISH

Carbon Consolidated's No. 1 Archie, 560 ft. S, 330 ft. E, NW cor. SW Sec. 22-20-4e. Set 6-in. 2,086 ft.

Carbon Consolidated's No. 2 Archie, 560 ft. S, 990 ft. E, NW cor. SW Sec. 22-20-4e. Set 12-in. 170 ft.; set 9-in. 600 ft.

J. H. Gibson, tr.'s No. 1 Thomas, 330 ft. S and W, NE cor. Sec. 16-22-7e. Rigging up.

Zeiger & Bacon's No. 2 Crossett Lbr. Co., 1,870 ft. N, 505 ft. E, SE cor. SE SW of Sec. 36, in Sec. 41. S.D. 50 ft.

OUACHITA PARISH

American Liberty Oil Co.'s No. Golson, C NW Sec. 25-17-1e. Rigging up.

G. E. Gordon, tr.'s No. 4 Rea-Green, 1,078 ft. S, 1,122 ft. W, NE cor. SE Sec. 2-18-4e. Set 4½-in. 2,167 ft.; drlg. 2,188 ft.

Pioneer Gas Co.'s No. 1 Pilhoil, 2,436 ft. N, 207 ft. W, common cor. Sec. 11-18-4e. Arranging to test, 2,215 ft.

NATCHITOCHES PARISH

Clyde Crichton's No. 1 Friedman Est., 406 ft. N, 428 ft. E, SW cor. Sec. 52-7-6. Set 8-in. 362 ft.; drlg. 3,167 ft.

Ab Jones' No. 1 Brown Lbr. Co., 400 ft. N, 330 ft. W, SE cor. Sec. 5-10-10. S.D. 1,033 ft.

RED RIVER PARISH

Sterling O. & R. Co.'s No. 1 Long Bell, Sec. 19-13-9. Recmt. 6-in. 1,126 ft.

J. S. Tuffree's No. 1 Wilkinson, 1,320 ft. S and W, NE cor. Sec. 11-12-11. S.D. 1,395 ft.

SABINE PARISH

G. H. Collins' No. 1-C Cranford, 330 ft. S and E, NW cor. SW NW Sec. 28-9-13. Tested S.W. 2,077 ft.

M. T. Hines' No. 1 J. B. Hill, SW NE Sec. 4-6-11. Drlg. 2,612 ft.

Laurel Pet. Co.'s No. 1 Long Bell Lbr. Co., 330 ft. N and E, SW cor. Sec. 14-8-14. Swbng. to test 2,283 ft.

Jack Lent's No. 1 Williams, Sec. 13-7-11. Drlg. 1,050 ft.

E. H. Morris, trustee's No. 1 Henderson, 330 ft. S and W, NE cor. SW NE Sec. 29-9-13. Comp. flowing 400 bbls., 1,698 ft.

Strickland et al's No. 1 Whitney Corp., Sec. 32-10-12. Junked and abd. 1,590 ft.

UNION PARISH

Crescent Drlg. Co.'s No. 1 Woolie, SE cor. NW NW Sec. 34-19-1e. Set 10-in. 40 ft.

Southern Prod. Co.'s No. 1 Clark, 500 ft. N and W, SE cor. NW NW Sec. 17-23-1e. S.D. 900 ft.

WEBSTER PARISH

Virgil Likens' No. 1 E. L. Stewart, 1,020 ft. E, 600 ft. S of NW cor. Sec. 23-18-10. Dry and abd. 3,014 ft.

ARKANSAS

ARKANSAS COUNTY

Grand Prairie Realty Co.'s No. 2 Fischer, 412 ft. S, 12 ft. W, NE cor. NW NW Sec. 4-4-4w. W.O. csg. 118 ft.

ASHLEY COUNTY

Glenn E. McFaddin et al's No. 1 Boreine Farms, 660 ft. S and W, NE cor. Sec. 1-18-8. S.D. 2,800 ft.

COLUMBIA COUNTY

Southern States Gas Co.'s No. 1 Piney Woods Lbr. Co., 330 ft. N and E, SW cor. NE NW Sec. 10-20-22. S.D. 960 ft.

HEMPSTEAD COUNTY

A. H. Bagnelle's No. 1 Trattner & Rhinehart, Sec. 2-13-26. S.D. 1,992 ft.

F. W. Martin's No. 2 Lafferty, C NW Sec. 17-14-24. Rigging up.

LAFAYETTE COUNTY

Kamon & Neely's No. 1 Cockran, NW cor. SE SW Sec. 26-19-25. Coring 3,538 ft.

MILLER COUNTY

M. D. K. Fitzwater's No. 1 E. H. Beck, 150 ft. N and E, SW cor. NW SW Sec. 34-15-26. Coring 2,914 ft.

Fitzwater et al's No. 1 Norson, SW cor. SE SW Sec. 20-15-27. S.D. 3,177 ft.

King Oil Corp.'s No. 1 C. H. Schroder, 200 ft. N, 330 ft. E, SW cor. SW NE Sec. 24-14-28. S.D. 3,167 ft.

King Oil Corp.'s No. 1 Anderson, 350 ft. E, 200 ft. S, NE cor. SW NE Sec. 16-14-27. S.D. 2,573 ft.

Magnolia Pet. Co.'s No. 3 Olivet, 336 ft. S and W, NE cor. NW NW Sec. 3-16-26. Drlg. 2,828 ft.

Frank Roe et al's No. 1 Frost Est., 150 ft. N and W, SE cor. SE SW Sec. 8-15-26. Set 10-in. 120 ft.

Lee Timberlake's No. 1 Frost Est., 330 ft. N and E, SW cor. SW SE Sec. 27-15-26. S.D. 2,100 ft.

NEVADA COUNTY

Carnett et al's No. 1 Floyd Munin, C SW Sec. 16-14-22. S.D. 50 ft.

OUACHITA COUNTY

F. A. Book et al's No. 1 Arnold, Sec. 34-16-16. S.D. 2,032 ft.

Snow Black Pet. Co.'s No. 1 O. F. Wyman, NW SW Sec. 36-11-16. Drlg. 280 ft.

Chas. Steele et al's No. 1 Myar Est., 330 ft. N and W, SE cor. SW SE Sec. 16-13-18. Dry and abd. 1,522 ft.

SEVIER COUNTY

Pendleton & Vaughn's No. 1 J. E. Johnson, 330 ft. E, 165 ft. S, NW cor. SW Sec. 35-9-30. Set 10-in. 40 ft.; drlg. 120 ft.

UNION COUNTY

Gardy Drlg. Co.'s No 1 Craig, Sec. 35-17-15, S.D.; W.O. 2,211 ft.

Gulf. Ref. Co.'s No. 49 L. Werner, 4,620 ft. N, 60 ft. E, SW cor. Sec. 5-16-16. Testing 6,431 ft.

H. L. Hunt's No. 15 E. F. Gregory, 330 ft. N and W, SE cor. Sec. 10-17-14. Arranging to blow with air, 3,478 ft.

H. L. Hunt's No. 18 E. F. Gregory, 330 ft. N and E, SW cor. Sec. 11-17-14. Derrick.

Mrs. R. K. Jones et al's No. 1 Davis, 330 ft. N and W, SE cor. NW NW Sec. 28-16-14. S.D. 3,202 ft.

Marine Oil Co.'s No. 3-A Union Sawmill, 330 ft. S and W, NE cor. SE SE Sec. 3-18-13. Coring 3,550 ft.

McCresienn Oil Co.'s No. 2 Parker, 420 ft. W, 230 ft. N, SE cor. NE SE Sec. 3-18-13. Drlg. 150 ft.

Joe Modisette et al's No. 1 D. S. Sturdevant, 330 ft. N and W, SE cor. Sec. 6-18-13. Dry and abd. 4,016 ft.

C. E. Murdock's No. 1 Pumphrey, C SW NW NE Sec. 11-17-14. Derrick.

F. F. Roberts et al's No. 1 Gallon Lbr. Co., 330 ft. S and E, NW cor. NW SE Sec. 10-16-14. Set 10-in. 104 ft.

MISSISSIPPI

AMITE COUNTY

Mineral Resources, Inc.'s No. 1 Anderson, C NE NW Sec. 14-3n-3e. S.D 550 ft.

BOLIVAR COUNTY

White & Jones' No. 1 Ballou, SE SE NW Sec. 17-24n-7w. Drlg. 820 ft.

CLARKE COUNTY

L. Beckwith et al's No. 1 Long Bell Lbr. Co., 538 ft. S, 125 ft. W of C Sec. 10-2n-16e. T.A.; lack of funds.

Clarke County Oil Co.'s No. 1 Dora Butler, C SW SW Sec. 15-2n-16e. Set 10-in. 63 ft.

HARRISON COUNTY

Big Ridge Oil Co.'s No. 1 Hinzin, NE Sec. 13-7s-10w. S.D.; W.O. 1,100 ft.

LAUDERDALE COUNTY

Bob Dalton's No. 1 Bounds, Sec. 34-7n-15e. S.D.; W.O. 1,600 ft.

MONROE COUNTY

P. J. McAlpine's No. 1 Frank Rye, Sec. 15-15s-17w. T.A. 2,931 ft.

P. J. McAlpine's No. 1 Crook, 1,090 ft. S, 90 ft. W, NE cor. Sec. 15-13s-13w. S.D. 2,500 ft.

RANKIN COUNTY

Cleve Love et al's No. 1 Ascher, 520 ft. S and E, NW cor. NE NE Sec. 18-5n-2e. Drlg. 120 ft.

SIMPSON COUNTY

Berry Corp.'s No. 2 R. T. Berry, Sec. 33-2n-4e. O.W.D.D.; S.D. for fuel at 2,510 ft.

WALTHALL COUNTY

Mutual O. & G. Co.'s No. 1 Boyd, SW cor. SW SE Sec. 24-2n-9e. Partly rigged up and S.D.

WARREN COUNTY

H. W. Elliott et al's No. 2 R. L. Parker, 780 ft. E, 1,570 ft. S, NW cor. Sec. 14-14n-1e. S.D.; high wtr. 1,600 ft.

WASHINGTON COUNTY

Perkins & Dees' No. 1 Lee, 1,500 ft. E, 500 ft. N, SW cor. Sec. 33-15n-3w. D.S. stuck 2,052 ft.

WINSTON COUNTY

Jack Vale et al's No. 1 Moody, 713 ft. N, 467 ft. E, SW cor. NW SW Sec. 3-13n-14e. Drlg 1,885 ft.

La.-Ark. Proven Fields

NORTH LOUISIANA

CADDO—BODESSA

United Gas Public Service Co.'s No. 2 Caddo Levee Board, 1,126 ft. S, 25 ft. E, NW cor. Sec. 26-23-16. Rigging up.

United Gas Public Service Co.'s No. 1 D. F. Barr, 1,320 ft. N, 1,551 ft. W, SE cor. Sec. 29-23-16. Drlg. 3,837 ft.

United Gas Public Service Co.'s No. 1 I. L. Young, C E½ SE Sec. 21-23-16. Set 7-in. 5,594 ft.; T.D. 5,608 ft.

SABINE PARISH—ZWOLLE

Alexander & Crane's No. 1 Fogman, SE cor. N¼ SW NE Sec. 18-7-11. S.D. 2,540 ft.

Ivan A. Allen's No. 1 La. Long Leaf, 330 ft. N and W, SE cor. NW SE Sec. 12-7-11. S.D. 2,120 ft.

H. C. Mauilding's No. 1 Davis, 350 ft. N and W, SE cor. NE NE Sec. 2-7-11. Drlg. 150 ft.

K. C. Peterson et al's No. 1 Bowman-Hicks, 330 ft. S and E, NW cor. SW NW Sec. 2-7-9. Derrick down.

Texas Co.'s No. 1 Mary Cutrer, 666 ft. W, 671 ft. N, SE cor. NE Sec. 11-7-11. Rigging up.

Tex.-La.-Ark. Oil Co.'s No. 1 Pickering Lbr. Co., Sec. 3-3-12. S.D. 2,742 ft.

EAST TEXAS (BORDER COUNTIES)

HARRISON COUNTY

R. C. Payne et al's No. 1 Lowery, H. D. Spain Sur. P.B. to 3,524 ft.

MARION COUNTY

Ed S. Holman's No. 1 Henderson, R. Bennington Sur. P.B. to 2,448 ft.

PANOLA COUNTY

R. A. Graddy's No. 1 M. J. McCormick, J. McAdams Sur. Moving in rig.

George Hudson et al's No. 1 J. F. Nail, C. McGeary Sur. Set 8-in. 40 ft.; fishing for core bbl. at 2,345 ft.

Geo. Le Grand's No. 1 P. J. Wardleigh, A. Thompson Sur. Set 10-in. 62 ft.

R. W. Price's No. 1 Crawford, J. A. Williams Sur. Set 10-in. 64 ft.

Fred Stovall Drlg. Co.'s No. 1 H. D. Ivey, P. Martin H.R.S. S.D. for csg. 1,980 ft.

SHELBY COUNTY

Cliff Stoval's No. 1 Pickering Lbr. Co., C. H. Patterson Sur. S.D.; rig repair. 1,485 ft.

ALABAMA

COVINGTON COUNTY

Geometer Prod. Corp.'s No. 1 Culbreath, SW cor. SW NE Sec. 8-3n-14e. Drlg. 6,100 ft.

HOUSTON COUNTY

Rice O. & G. Co.'s No. 1 Oakley est., SE cor. NW SW Sec. 9-3n-29e. S.D. 2,776 ft.

LAMAR COUNTY

DeSoto O. & G. Corp.'s No. 1 Gardner, Sec. 22-15s-16w. Drlg. 4,300 ft.

WALTON COUNTY—FLORIDA

Geometer Oil Corp.'s No. 2 Walton Land & Timber Co., Sec. 10-1s-19w. Drlg. core tests on block; R.U. and S.D.

Gulf Coast Wildcats

(Continued from Page 67)

W of NE cor. of Lot 58, H.T.&B. Sur. No. 23. Location.

Trumba Oil Co.'s (J. M. Campbell) No. 1 H. McCauley, 150 ft. each way out of NE cor. of W 5 acres of Lot No. 2, A.C. H.&B. Sur. No. 91. Location.

Uscan Oil Co.'s No. 1 Metzer, center of Lot 19, H.&T.R. Sur. No. 23. T.D. 3,996 ft.; 7-in. csg. 3,970 ft.; I.P. 450 bbls. per day on ¼-in. choke; T.P. 260 lbs

Whittle Oil Co.'s No. 1 Duke, 320 ft. W of E line, center N and S Lot 18, H.T.&B. Sur. No. 23. Spudded and S.D.

Woodbine Oil Co.'s No. 1 A. F. Beddo, midway N and S lines of a 2-ac. lease, Blk. 29, H.T.&B. Sur. Derrick.

OLD OCEAN—BRAZORIA COUNTY

Harrison & Abercrombie's No. 2 Bernard River, 1,000 ft. N, 54 deg. W, 400 ft. S, 36 deg. W of No. 1. Charles Breen Sur. Drlg. shale 4,250 ft.

PLEDGER—BRAZORIA COUNTY

Humble O. & R. Co.'s No. 2 Smith, 2,050 ft. NE of SW line, 1,810 ft. NW of SE line, 220 ft. SE of W line, Gray and Moore Sur. Abd. location.

PORT LAVACA—CALHOUN COUNTY

Empire G. & F. Co.'s No. 1 Dusck, 540 ft. W of E line, 440 ft. N of S line of E 70 acres of 102.4-ac. tract, W. Benavides Sur. Cmtd. surface csg. 1,300 ft.

Halliburton Oil Prod. Co.'s No. 2 Dave Burton, 330 ft. SW along E line of Texas Co.'s Shofner 10-ac. lease and 330 ft. at R/A, M. Ganches Sur. Drlg. shale 990 ft.

Texas Co.'s No. 1 Hackney, 1,504 ft. N of S line and 466 ft. E of W line of B. Rodriquez Sur. Drlg. shale 970 ft.

Texas Co.'s No. 1 Ada Foster, 1,250 ft. W along S line from SE cor. of lease and 466 ft. N at R/A, A. Esparza Sur. Rig up.

Texas Co.'s No. 1 Geryk, 1,400 ft. W from E line, 470 ft. N from S line of lease, Lot 7, Ysidro Benavides Sur. Coring S.W. sand 5,591 ft.

Texas Co.'s No. 1 Kupatt, 466 ft. E from S line of lease, Lot 17, Ysidro Benavides Sur. Drlg. sand 5,150 ft.

Texas Co.'s No. 1 Shofner, SE offset to Steinberger's No. 1 Shofner, M. Sanches Sur. T.D. 6,260 ft.; 7-in. csg. 6,232 ft.

Texas Co.'s No. 1 R. Duelberg, 1,585 ft. NE along S line from SW cor. of lease and 390 ft. N at R/A, M. Sanches Sur. T.D. 6,270 ft.; 7-in. csg. 6,244 ft.; tested S.W.; no gas or oil; cmtd. back to 6,240 ft.; perforated csg. 6,207-11 ft. and 6,227-35 ft.; showed no pressure, no fluid; prepare to make another test.

Texas Co.'s No. 1 J. A. Marten, 1,700 ft. SW along N line from NE cor. and 1,400 ft. at R/A in SE direction, Florentina Garcia League Sur. T.D. 7,512 ft.

Tulane Gordon's No. 1 W. A. Shofner, 339.5 ft. from N line, 295 ft. from E line of block, D. Tilley Addn., M. Sanches Sur. Location.

ANAHUAC—CHAMBERS COUNTY

Humble O. & R. Co. and Rycade Oil Co.'s No. 1 Engels, 466 ft. out of SE cor. of Sec. 50, H.&T.C. Sur. Location.

Humble O. & R. Co.'s No. 2 Broussard, 2,332 ft. E of W line, 2,332 ft. N of S line of Sec. 63, H.&T.C. Sur. Location.

Humble O. & R. Co.'s No. 3 Broussard, 1,399 ft. out of NW cor. of Sec. 63, H.&T. C. Sur. Derrick.

Humble O. & R. Co.'s No. 2 Clark, 2,332 ft. W of E line, 2,332 ft. N of S line of Sec. 57, H.&T.C. Sur. 16-in. csg. 120 ft.; T.D. 125 ft.

Humble O. & R. Co.'s No. 3 Middleton, 2,332 ft. N of S line, 2,332 ft. E of W line of Sec. 58, H.&T.C. Sur. T.D. 7,172 ft.; made D.S. test 7,141-72 ft.; tested S.W.; P.B.

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Prod. Co.'s No. 2-C Barber, 93 ft. N of No. 1, 100 ft. E of W line. T.D. 5,220 ft.; 9⅝-in. csg. 5,180 ft.; swbd. dry; R.U. to deepen.

Sun Oil Co.'s No. 7 Higgins, 50 ft. S of N line, 50 ft. W of E line. Drlg. shale 3,374 ft.

Sun Oil Co.'s No. 11 Chambers County, half way between and in line with Nos. 9 and 10. Drlg. shale 3,321 ft.

Texas Gulf Prod. Co.'s No. 25-B Kirby, 75 ft. S of N line of Kirby "B" Lease, S offset to No. 3 Fitzgerald. Drlg. shale and boulders 797 ft.

Texas Gulf Prod. Co.'s No. 6 Wilburn, 50 ft. N of S line, 25 ft. E of W line, William Hodges Sur. Drlg. shale and lime 3,924 ft.

Texas Gulf Prod. Co.'s No. 12-A Kirby, 613 ft. N of S line, 85 ft. W of E line, W of Humble O. & R. Co.'s No. 8-B Kirby. T.D. 5,341 ft.; I.P. 478 bbls. per day; 624 lbs. of pressure; flowing by heads.

Texas Gulf Prod. Co.'s No. 2 Fitz-Meadows, 221 ft. S of N line, 50 ft. W of E line of T. S. Fitz lot. T.D. 4,563 ft.; P.B. 4,040 ft.; perforated csg.; testing.

Yount Lee Oil Co.'s No. 30 Chambers County School Land, 50 ft. N of S line, direct offset to Sun Oil Co.'s No. 11. Drlg. cap rock 1,545 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 19 Mays, 400 ft. SE of No. 11, 400 ft. SW of No. 14, E. H. R. Wallace Sur. Running tubing to test.

BIG CREEK—FORT BEND

Trans State Oil Co.'s No. 1 B. J. Wheat, 108 ft. N of S cor. of J. F. Ahlers lease and 88 ft. E at right angles, W. Young Sur. Rig up.

BOLING—FORT BEND COUNTY

Irwin Larsen et al's No. 1 J. R. Farmer, 100 ft. NW and 100 ft. SW from E cor. of 125-ac. lease, James Scott Sur. Location.

Midland Oil Co.'s No. 1 P. F. Coulter, 150 ft. from S line, 4,174 ft. from W line of 100-ac. tract, Miller League No. 2. Set screen; T.D 4,186 ft.

Navarro Oil Co.'s No 2 H. R. Farmer, 363 ft. from SW line and 160 ft. from SE line of Humble O. & R. Co.'s lease, James Scott Sur. T.D. 4,058 ft.; P.B. 3,870 ft.; abd.

Sun Oil Co.'s No. 1 H. R. Farmer, 103 ft. from N line, 359.2 ft. from W line of 100-ac. tract, James Scott League Sur. Drlg. shale 3,075 ft.

Yew Development Co.'s No. 1 C. E. Farmer, 600 ft. S and 325 ft. W of the NE cor. of 50-ac. lease, James Scott Sur. Rig up.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 44 Moore, E.M.&G. Co. Sur. Derrick.

Gulf Prod. Co.'s No. 43 Moore, 350 ft. E along S line of SW cor. of E.M.&G. Co. Sur. and 740 ft. N at R/A to said line of lease, 350 ft. E of No. 3 Moore. Drlg. shale 5,919 ft.

THOMPSON—FORT BEND COUNTY

Gulf Prod. Co.'s No. 25 F. I. Booth, 485 ft. from N line, 698 ft. W of No. 24, S. Kennedy Sur. Derrick.

Gulf Prod. Co.'s No 9 Hammerstram, S. Kennedy Sur Location.

Gulf Prod. Co.'s No. 10 Hammerstram, S. Kennedy Sur. T D. 5,294 ft.; S.D.

Gulf Prod. Co.'s No. 12 Gubbels. Drlg. sandy shale 5,335 ft.

Humble O. & R. Co.'s No. 1-B Gubbels, 466 ft. out of SE cor. of 100-ac. tract, Sam Kennedy League. T.D. 5,300 ft.; 7-in. csg. 5,177 ft.

Humble O. & R. Co.'s No. 25-A Booth. Derrick.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 47 Cade, Fitzsimmons Sur. T.D. 2,995 ft.; P.B. 1,510 ft.; drlg. shale 1,740 ft.

Yount Lee Oil Co.'s No. 2 Louslafot, 150 ft. due S of No. 1, M. Dunman Sur. Drlg. hard sand 2,552 ft.

Yount Lee Oil Co.'s No. 2-A Taylor, 85 ft. W of No. 1, A. Dunman Sur. Drlg. sand 4,005 ft.

Yount Lee Oil Co.'s No. 46 Cade, 424 ft. SW of No. 35, 424 ft. NW of No. 36, Fitzsimmons Sur. Drlg. sand and lime 5,272 ft.

Yount Lee Oil Co.'s No. 1 Taylor, D. Dunman Sur., 125 ft. due E of No. 1-A Gordon-Viterbo. T.D. 4,853 ft.; running 7-in. csg.

Yount Lee Oil Co.'s No. 1 Acon & Hughes 85 ft. E of No. 1 Pabst, on a 3.83-ac tract, M. Dunman Sur T.D. 4,881 ft.; I.P. 230 bbls. in 24 hrs. through 3/16-in. choke; T.P. 500 lbs.

DICKINSON—GALVESTON COUNTY

Humble O. & R. Co.'s No. 1 Bayou Development Co., 375 ft. S of N line and midway between E and W lines of Lot No. 7, John Sellers Sur. Location.

Humble O. & R. Co.'s No. 2-B Maco Stewart, 400 ft. from N line of Bayou, 610 ft. from No. 1-B, John Sellers Sur. Reaming to set 7-in. csg.; T.D. 3,063 ft.

Humble O. & R. Co.'s No. 1 E. E. Anderson, 375 ft. N of S line, and midway between E and W lines of Lot No. 4, John Sellers Sur. Location.

Humble O. & R. Co.'s No. 1 Fugger, 333 ft. from W line, 532 ft. from N line of lease, J. S. Sherman Sur. T.D. 3,081 ft.; 7-in. csg. 3,081 ft.; perforated csg. T.D. 3,081 ft.; 7-in. csg. 3,081 ft.; flowed 7 bbls. per hr. through D.S.; swbng.

Humble O. & R. Co.'s No. 1 Townes, 440 ft. E of W line, 550 ft. N of N bank of Bayou, B.B.B.&C. Sur. Reaming to set 7-in. csg.; T.D. 3,062 ft.

Humble O. & R. Co.'s No. 2-A Maco Stewart, 3,324 ft. S along E line of S bank of Bayou and 566 ft. W of E line at R/A John Sellers Sur.
T.D. 3,210 ft.; reaming to set 7-in. csg.
Stanolind O. & G. Co.'s No. 1 State, 247 varas S of Humble O. & R. Co.'s No. 1 Jones.
Spudded and S.D.

ARRIOLA—HARDIN COUNTY

Houston Oil Co.'s No. 8 fee, Arriola Sur.
T.D. 3,050 ft.; testing.
Houston Oil Co.'s No. 6-X fee, 400 ft. SE of No. 4-X, 500 ft. SE of No. 5-X fee.
Drlg. sandy shale 4,642 ft.
Republic Prod. Co.'s No. 13 fee, 2,599 ft. S of N line, 474 ft. E of W line, of E. Arriola Sur.
Coring shale 3,228 ft.

BATSON—HARDIN COUNTY

Danciger Oil & Refining Co.'s No. 1 Ton Wynne, 250 ft. S, 150 ft. W of Deering's No. 1 Cruse.
Drlg. shale 5,310 ft.
John Deering's No. 1 Conzelman, 2,810 ft. E along N line, from NW cor. of H. Numm Sur. and 35 ft. at R/A, W. Donoho Sur.
Coring sandy shale 4,588 ft.
John Deering's No. 1 Bullock, 1,000 ft. N. 17 ft. E of middle line of 20-ac. tract, Bullock tract, Dondo Sur.
T.D. 6,294 ft.; hole heaved to 4,944 ft.; S.D.
John Deering's No. 2 Cruse, 200 ft. E and 50 ft. S of No. 1 Cruse, W. Donaho Sur.
Rig up.

SOUR LAKE—HARDIN COUNTY

Arlis Pet. Co.'s No. 1 Harkan and Langham. Dig pits.

PIERCE JUNCTION—HARRIS COUNTY

J. S. Abercrombie's No. 5 John Ritter, 359 ft. SW of No. 4, 1,047 ft. NE along SE line out of SW cor. of 160-ac. tract, thence 93 ft. NW at R/A, Sec. 51, J. Hamilton Sur.
Drlg. shale 2,214 ft.
Gulf Prod. Co.'s No. 11 H. C. Cain, 390 ft. from W line, thence 429 ft. at R/A to N line of 130-ac. tract, Jas. Hamilton Sur. No. 98.
Drlg. gumbo 1,245 ft.
Gulf Prod. Co.'s No. 40 E. R. Taylor, 89.5 ft. along E line of E. R. Taylor's 540-ac. tract from SW cor., south offset to Hamil & Smith's No. 1 Howe.
Drlg. sandy shale and lime 3,396 ft.
Hamil & Smith's No. 1 C. W. Mowery, 50 ft. out of NE cor. of 600-ac. tract, Sec. 55, J. Hamilton Sur.
Drlg. shale and lime 5,446 ft.
Navarro Oil Co.'s No. 1 Dooley, J. Hamilton Sur.
Milled out at 5,700 ft. and redrilled 6,445 ft.; abd.

HUMBLE—HARRIS COUNTY

Sun Oil Co.'s No. 84 River, 200 ft. E of No. 61, in 292-ac. tract, R. Dunman Sur.
Drlg. rock 772 ft.
Sun Oil Co.'s No. 29 Bender, Robert Dunman Sur.
T.D. 4,349 ft.; P.B. 1,070 ft.; sidetracked; drlg. shale 1,180 ft.
Texas Co.'s No. 32 Humble, 350 ft. S. 50 ft. W of T.T. Co. and C.O.&G. and 1,718 ft. E of NW cor. of lease, Stevenson Sur. 10-in. csg. 560 ft.
T.D. 3,149 ft.; 7-in. 3,121 ft.

MYKAWA—HARRIS COUNTY

Alpha Pet. Co.'s No. 1 Waggenhausen, C of E¼ Lot 10, F. J. Rothas Sur.
T.D. 4,681 ft.; P.B. 4,575 ft.; 7-in. csg. 4,516 ft.; flowed some oil and S.W.; will P.B.
Danciger O. & R. Co.'s No. 3 Minnetet, 563 ft. due E of No. 1, thence 150 ft. at R/A, Blk. 254, W. H. Lovett Sur.
Location.
Sterling Oil & Ref. Co.'s No. 1 B. H. Williams, 200 ft. W of E line, 915 ft. N of S line of 29-ac. tract, Wm. Lovett Sur.
T.D. 4,416 ft.; running 7-in. csg.
West Prod. Co.'s No. 1 Forbes, center of Blk. 15, F. J. Rothas Sur.
Derrick.
West Prod. Co.'s No. 1 J. E. Lobit, Blk. 9, F. J. Rothas Sur.
T.D. 4,542 ft.; 7-in. csg. 4,410 ft.
West Prod. Co.'s No. 1 B. J. Speck, 330 ft. each way from the NW cor. of the tract, W. R. Wilson Sur.
Drlg. shale 4,937 ft.

TOMBALL—HARRIS COUNTY

Amerada-Stanolind O. & G. Co.'s No. 2 W. H. Doyle, 257 ft. from E and W lines, 466 ft. from N line of 34-ac. tract, J. House Sur.
Cutting and pulling liner; T.D. 5,587 ft.
Amerada Pet. Corp.'s No. 2 A. B. Metzler, 10¾-in. csg. 1,089 ft.; T.D. 1,095 ft.
Humble O. & R. Co.'s No. 3 Gossett, 550 ft. from most northerly SE line, 136 ft. NE from southwesterly SW line, E. Smith Sur.
Drlg. shale 944 ft.
Humble O. & R. Co.'s No. 1-A Hillegeist, 691 ft. N of S line, 168 ft. E of W line, 168 ft. W of E line of 11.65-ac. tract, James House Sur.
Drlg. shale 1,910 ft.
Humble O. & R. Co.'s No. 2 Scherer, 1,872 ft. S of N line, 566 ft. E of W line, 566 ft. W of E line, J. H. Edwards Sur.
Drlg. shale and lime 5,615 ft.
Humble O. & R. Co.'s No. 1 Laird, 466 ft. from SE line, 29 ft. W of lease, J. Pruett Sur.
T.D. 5,562 ft.; 7-in. csg. 5,418 ft.; I.P. 9 bbls. per hr. on ¼-in. choke; T.P. 350 lbs.; C.P. 200 lbs.
Humble O. & R. Co.'s No. 2 Martens, 1,534 ft. from S line, 185 ft. from E line of lease, J. House Sur.
T.D. 5,601 ft.; 7-in. csg. 5,597 ft.; I.P. 11 bbls. per hr.; T.P. 250 lbs.
Shell Pet. Corp.'s No. 1 Rudel, 947 ft. W. 577 ft. N of SE cor. of lease, Wm. Hurd Sur.
T.D. 5,572 ft.; 7-in. csg. 5,541 ft.
Texas Co.'s No. 1 Mueller, 850 ft. S, 600 ft. W of NE cor. of lease, J. M. Hooper Sur.
Drlg. shale 5,565 ft.

BIG HILL—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 1-B Pipkin & Davis, 2,225 ft. from E line and 2,385 ft. from N line of survey, Wm. McFadden Sur.
Coring sand 3,692 ft.

FANNETT—JEFFERSON COUNTY

Gulf Prod. Co.'s No. 5 Junker.
Drlg. shale and lime 4,228 ft.

CLEVELAND—LIBERTY COUNTY

Black Gold Pet. Oil Corp.'s No. 2 R. D. McDonald, 466 ft. W of most westerly E line and 466 ft. N of most northerly S line of survey, 923 ft. W of Gulf Prod. Co.'s No. 7-C Kirby Lbr. Co., T. Devers Sur.
Derrick.
Gulf Prod. Co.'s No. 2 McDonald, 3,569 ft. W along S line from most easterly SE cor. of survey and 1,286 ft. N at right angles, Charles Smith Sur.
Rig up.
Gulf Prod. Co.'s No. 9-C Kirby Lbr. Co., 1,967 ft. N, 1,400 ft. E from the NE cor. of J. S. Eldridge Sur. in the John Pleasant Sur.
T.D. 5,852 ft.; 7-in. csg. 5,842 ft.; I.P. 44 bbls. per day through ¼-in. choke; T.P. 1,650 lbs.; C.P. 1,850 lbs.
William J. Colegrove et al's No. 1 State School Land & Dev. Co., 446 ft. from W line and 170 ft. from S line of survey, Clayton Harper Sur.
Location.

ESPERSON—LIBERTY COUNTY

General Crude Oil Co.'s No. 21 Esperson.
Fishing; T.D. 6,631 ft.
General Crude Oil Co.'s No. 1 W. D. Kay, Malcolm Duncan Sur., 1,537 ft. along N T.D. 9,343 ft.; will drill a few ft. deeper and then P.B.
General Crude Oil Co.'s No. 10 Davis, 2,000 ft. from E line, 660 ft. from S line of D. Kokernut Sur.
Drlg. shale 7,365 ft.

HANKAMER—LIBERTY COUNTY

Eljean Oil Co.'s No. 1 Ezzell, 1,325 ft. from N. 150 ft. from E line of Ezzell 175-ac. tract.
T.D. 2,632 ft.; I.P. 325 bbls. in 24 hrs. through ¼-in. choke.
Gulf Prod. Co.'s No. 1-B W. L. Bingle, 159 ft. E along S line of H.&T.C. Sur., thence 378 ft.
Drlg. shale and shells 4,881 ft.
Gulf Prod. Co.'s No. 19 E. W. Boyt, 100 ft. from W line, 298 ft. S of No. 18, Amos Allen Sur.
S.D. 2,651 ft.
Gulf Prod. Co.'s No. 20 E. W. Boyt, 1,235 ft. along W line of survey, 159 ft. from W line at R/A, Amos Allen Sur.
Moving in rig.
Gulf Prod. Co.'s No. 21 E. W. Boyt, 110 ft. from W line of Amos Allen Sur.
Location.
Gulf Prod. Co.'s No. 22 Boyt, Allen Sur.
Drlg. shale and lime 4,004 ft.
Will Strozier et al's No. 1 Ezzell, 700 ft. N of S line, 150 ft. W of E line of Levi Barrow Sur.
Derrick.
Wilson Roach Oil Co.'s No. 2 Marrs-McLean, 513.4 ft. from W line, 100 ft. from E line, Levi Barrow Sur.
Drlg. shale 3,673 ft.

HULL—LIBERTY COUNTY

Fondren & Snowden's No. 2 Humble-Hooks, 50 ft. from S line, 300 ft. NW of No. 1, J. Devore Sur.
Drlg. shale 2,100 ft.
Sterling O. & R. Co.'s No. 2 Taylor, 70 ft. W, 50 ft. N of the NE cor. of Humble-Taylor lease, J. Devore League.
Drlg. shale 2,375 ft.

VAN VLECK—MATAGORDA COUNTY

Skelly Oil Co.'s No. 3 Cobb "B," 2,750 ft. from NW line, 2,900 ft. from SW line of M. Cummins Sur.
Drlg. shale 5,630 ft.

MARKHAM—MATAGORDA COUNTY

Hamil & Hamil's No. 1 Hardy, 150 ft. E and 150 ft. S from NW cor. Hardy lease, H. Parker Sur.
4,028 ft.; no report.

MOSS BLUFF—LIBERTY COUNTY

Gulf Coast Sulphur Co.'s No. 1 McManus, 558 ft. from E. 1,650 ft. from N line of W. A. tract, B. M. Spinks Sur.
Location.

CONROE—MONTGOMERY COUNTY

Humble O. & R. Co.'s No. 74-A South Tex. Lbr. Co., 466 ft. from N line, 1,500 ft. from W line of 325-ac. tract, Alex McCowan Sur.
T.D. 5,080 ft.; 7-in. csg. 5,052 ft.
Sun Oil Co.'s No. 20 Fastic.
Location.

SPLENDORA—MONTGOMERY COUNTY

Bryce McCandless et al's No. 1 Texas Long Leaf Lbr. Co., 330 ft. from N and E lines of the W¼ of Blk. No. 8, Walker County School Land Sur.
Derrick.

ORANGE—ORANGE COUNTY

Trio Oil Co.'s No. 1 D. S. Comier, 69 ft. W of E line and 39 ft. S of N line of 6.83-ac. tract in W. M. Dyson Sur.
S.D. 3,005 ft.

PORT NECHES—ORANGE COUNTY

Texas Co.'s No. 4-B Polk, 750 ft. S and 1,450 ft. W from NE cor. of lease, Jacob Beaumont Sur.
Location.
Texas Co.'s No. 5-B Polk, 750 ft. S and 550 ft. W from NE cor. of lease, Jacob Beaumont Sur.
Abd. 1,716 ft.
Texas Co.'s No. 6-B Polk, 750 ft. S and 250 ft. W from NE cor. of lease, Jacob Beaumont Sur.
Location.

LIVINGSTON—POLK COUNTY

T. A. Carlton Oil Co.'s No. 2 Watt, 695 ft. N of No. 1, 365 ft. from E and W lines of lease, A. Viesca Sur.
Rig up.
Gem Oil Co.'s No. 3 Watt, 300 ft. S line, 330 ft. W line of lease, A. Viesca Sur.
T.D. 4,238 ft.; I.P. 27 bbls. of oil first 10 hrs.
Gem Oil Co.'s No. 6 Davis & Holmes, 652 ft. from W and 662 ft. from N line of survey A. Viesca Sur.
Rig up.
Hawkeye Pet. Co.'s No. 1 L. C. Howard, 365 ft. from E line, 330 ft. from S line of 75-ac. tract, A. Viesca Sur.
Bldg. derrick.
Hawkeye Pet. Co.'s No. 2 Howard, 365 ft. from E line of lease, 695 ft. N of No. 1, A. Viesca Sur.
Location.
Humble O. & R. Co.'s No. 10 Granbury, 466 ft. NW and 466 ft. SW from S cor. of L. C. Howard 75-ac tract, A. Viesca Sur.
Location.
Humble O. & R. Co.'s No. 9 Granbury & Smith, 2,000 ft. from N and 466 ft. from E lines of Sec. 10, A. Viesca Sur.
T.D. 4,229 ft.; 7-in. csg. 4,222 ft.

SAN FELIPE—WALLER COUNTY

Buck Oil Co.'s No. 2 Vaughn, 300 ft. S. thence 200 ft. E from Seaport Oil Co.'s No. 1 Vaughn, J. McFarland Sur.
Drlg. shale 2,964 ft.

GRETA—REFUGIO COUNTY

Hewitt & Daugherty's No. 12 Lambert.
Rig up.

REFUGIO—REFUGIO COUNTY

Houston Oil Co.'s No. 11 Wilson Heard, 330 ft. S of center of N line on 5-ac. lease, Refugio townsite.
Derrick.
Houston Oil Co.'s No. 27 Rooke, 660 ft. S of No. 1 McMullen Sur.
T.D. 4,921 ft.; cmtd. csg.
United Gas Co.'s No. 20 Lambert.
Drlg. shale 2,330 ft.

TOM O'CONNOR—REFUGIO COUNTY

Quintana Pet. Co.'s No. 11-A O'Connor, 3,200 ft. from W line, 2,900 ft. from N line of Swisher Sur.
Drlg. shale 2,930 ft.
Quintana Pet. Co.'s No. 12-A O'Connor, 5,250 ft. from W line, 3,750 ft. from N line of Swisher Sur.
Drlg. shale 3,975 ft.

McFADDIN-O'CONNOR DISTRICTS—VICTORIA AND REFUGIO COUNTIES

Texas Co.'s No. 9 McFaddin, 1,850 ft. N. 2 deg., 45 ft. S from No. 2.
T.D. 6,208 ft.; 7-in. csg. 6,196 ft.; drlg. shale 6,242 ft.
Houston Oil Co.'s No. 1 Fagan, 330 ft. from Guadalupe River on the Fagan Island, F. and J. M. Rodrigues Sur., SW of McFaddin Field.
T.D. 2,232 ft.; running tubing test.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 13 Janner, 400 ft. NW of No. 9, 565 ft. NE of No. 10, J. F. Perry Sur.
T.D. 1,449 ft.; drlg. plug.

LOUISE—WHARTON COUNTY

Pure Oil Co.'s No. 2 Wharton, 400 ft. NW and 450 ft. NE from the most westerly cor. of Sec. 26, F. Walnut Sur.
Rig up.
Pure Oil Co.'s No. 2 McIntyre, 485 ft. NE, 880 ft. SE from most NE cor. of 317.22-ac. lease, Morris & Cummings Sur.
10¾-in. csg. 1,202 ft.; T.D. 1,204 ft.

BAY ST. ELAINE—TERREBONNE PARISH

Texas Co.'s No. 3 School Board, Sec. 16-22s-15e.
Location.
Texas Co.'s No. 10 State, 4,550 ft. E and 4,595 ft. S of NW cor. of Sec. 17-22s-15e.
Building foundations.

CALLIOU ISLAND—TERRABONNE PARISH

Texas Co.'s No. 20 Calliou Island.
T.D. 4,119 ft.; S.D.
Texas Co.'s No. 23 Calliou Island.
Drlg. shale 2,930 ft.

SOUTH LOUISIANA FIELDS

BLACK BAYOU—CAMERON PARISH

Shell Pet. Corp.'s No. 22 Watkins, 1,682 ft. E, 1,825 ft. S of NW cor. Sec. 17-12-12.
Dig pits.
Shell Pet. Corp.'s No. 24 Watkins, 2,832 ft. W, 695 ft. S of NW cor. Sec. 18-12-12.
Location.
Shell Pet. Corp.'s No. 22 Watkins, 2,230 ft. W and 1,340 ft. S of NE cor. Sec. 18-12s-12w.
T.D. 4,175 ft.; prepare to P.B.
Shell Pet. Corp.'s No. 21 Watkins, 1,570 ft. E of NW cor. Sec. 17-12s-13w.
Cmtd. csg. 4,099 ft.
Shell Pet. Corp.'s No. 3 State.
T.D. 6,159 ft.; S.D.

BOSCO—ACADIA AND ST. LANDRY PARISHES

Superior Oil Prod. Co.'s No. 5 Iseringhausen, 2,662 ft. S, 636 ft. E out of NW cor. of Sec. 35-8s-3e.
13⅜-in. csg. 1,230 ft.
Superior Oil Prod. Co.'s No. 6 Larcade, 451 ft. N, 2,053 ft. E of SW cor. Sec. 26-8s-3e.
Drlg. shale 7,550 ft.
Superior Oil & Prod. Co.'s No. 1 E. Arceneaux, 2,027 ft. E of NW cor. of Sec. 35-8s-3e.
Drlg. sand and sandy shale 7,804 ft.
Superior Oil & Prod. Co.'s No. 1 M. Benoit, 1,165 ft. W of SE cor. of Sec. 34-8s-3e.
Drlg. shale 7,853 ft.
Superior Oil Prod. Co.'s No. 2 Domingua, 451 ft. N, 2,053 ft. E of SW cor. of Sec. 26-8s-3e.
Drlg. sandy shale 7,638 ft.
Superior Oil & Prod. Co.'s No. 8 Hernandez, 105 ft. E, 219 ft. N of SW cor. of NW¼ Sec. 24-8s-3e.
T.D. 8,621 ft.; making electrical coring test.
Superior Oil Prod. Co.'s No. 5 Hernandez, 1,424 ft. S, 350 ft. W of NE cor. of NW¼ Sec. 24-8s-3e.
T.D. 7,845 ft.; 7-in. csg. 7,835 ft.
Superior Oil Prod. Co.'s No. 2 Richard, 1,916 ft. S, 799 ft. W of NE cor. of Sec. 34-8s-3e.
T.D. 8,706 ft.; 7-in. csg. 8,691 ft.
Superior Oil Prod. Co.'s No. 3 Johnson, 1,958 ft. S, 1,325 ft. W of NE cor. of Sec. 34-8s-3e.
T.D. 8,688 ft.; 7-in. csg. 8,673 ft.
Superior Oil Prod. Co.'s No. 2 Le Blanc, 1,698 ft. S, 937.09 ft. W of NE cor. Sec. 33-8s-3e.
Cutting and pulling liner; T.D. 8,373 ft.
Superior Oil Prod. Co.'s No. 2 E. Mire, 1,039.07 ft. S, 916.82 ft. W of NE cor. Sec. 33-8s-3e.
7-in. csg. at 8,630 ft.; T.D. 8,655 ft.; I.P. 518 bbls. per day in 24 hrs. through 9/64-in. choke; T.P. 1,450 lbs.; C.P. 1,900 lbs.

ASCENSION PARISH

Athens Oil Co.'s No. 1 United Land, 1,400 ft. S, 1,530 ft. W of NE cor. Sec. 15-10s-4e.
Running csg. 4,351 ft.
Humble O. & R. Co.'s No. 5 Community, 228 ft. SW of NE line of section, 200 ft. at R/A to east bank of river, Sec. 33-10s-2e.
T.D. 5,513 ft.; 7-in. csg. 5,498 ft.
Humble O. & R. Co.'s No. 4 Community, 4,825 ft. from NE cor. and 283 ft. S of N line at R/A, Sec. 33-10s-2w.
Digging cellar.
CAMERON MEADOWS—CAMERON PAR.
Burton-Sutton Oil Co.'s No. 6 School Lot, 423 ft. E of No. 5.
T.D. 3,375 ft.; prepare to test.
Magnolia Pet. Co.'s No. 12 Cameron Meadows, 423 ft. E of No. 11.
Rig up.
Burton-Sutton Oil Co.'s No. 4 School Land, 2,891 ft. W and 150 ft. N of SE cor. of Sec. 16-4s-13w.
Derrick.

CHOCTAW DOME—IBERVILLE PARISH

Standard Oil Co.'s No. 1 Myrtle, 900 ft. N and 550 ft. W of SE cor. of SW¼ of Sec. 52-9s-11e.
Rig up.

DOG LAKE—TERREBONNE PARISH

Texas Co.'s No. 11 State, 1,100 ft. N, 2,474 ft. W of SE cor. of Sec. 21-21s-16e.
S.D. 2,014 ft.
Texas Co.'s No. 17 State.
Drlg. deeper after testing S.W. and oil on D.S. test; T.D. 5,527 ft.

FOUR ISLE—TERREBONNE PARISH

Texas Co.'s No. 8 La. Land & Expl. Co., 2,177 ft. E, 1,385 ft. S of NW cor. Sec. 24-21s-16e.
Rig up.
Texas Co.'s No. 5 State, 885 ft. S, 2,327 ft. E of NW cor. of Sec. 24-21s-16e.
Location.

GARDEN ISLAND BAY—PLAQUEMINES PARISH

Texas Co.'s No. 13 State, 3,391 ft. S and 1,404 ft. W of NE cor. Sec. 107-23-32.
Rig up.

GUEYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 6, Alliance Trust, 667 ft. E, 1,787 ft. S line of lease, Sec. 34-11s-1w.
T.D. 9,390 ft.; ran 1,208 ft. 5¾-in. csg.

HACKBERRY—CAMERON PARISH

Gulf Prod. Co.'s No. 18 Erwin, 271 ft. W and 722 ft. N of SE cor. of Sec. 13-12s-10w.
T.D. 6,905 ft.; prepare to make D.S. test.
Texas Co.'s No. 14 State, 500 ft. SE of No. 13, Sec. 13-12s-10w.
Sidetracked 3,456 ft.
Texas Co.'s No. 15 State, Sec. 13-12s-10w.
Coring oil sand 6,811 ft.
Union Sulphur Co.'s No. 3 Humble (W.O.).
Swabbing 5,978 ft.
Yount Lee Oil Co.'s No. 13 Gulf Land, Sec. 14-12s-10w.
T.D. 4,996 ft.; reaming to straighten hole.
Yount Lee Oil Co.'s No. 1-A Gulf Land, 2,000 ft. S and 50 ft. E of the NW cor. of Sec. 22-12-10.
Rig up.

NEW IBERIA—IBERIA PARISH

Helis' No. 1 Sabatoir, 900 ft. N and 1,210 ft. E. of SE cor. of Sec. 53-12s-7e.
Location.
Iberia Oil Corp. and Y. D. Spell's No. 1 Bernard, 150 ft. E of No. 1, Sec. 54-12s-7e.
S.D. 3,846 ft.; salt.

IOWA—CALCASIEU AND JEFF DAVIS

Shell Pet. Corp.'s No. 16 Heyd, 990 ft. S, 998 ft. W of NE cor. Sec. 13-9s-7w.
Drlg. sandy shale 4,978 ft.
Shell Pet. Corp.'s No. 4 Tuten, 330 ft. S, 1,819 ft. W of NE cor. SE¼ Sec. 13-9s-7.
T.D. 6,693 ft.; oil sand.

JENNINGS—ACADIA PARISH

Port City Oil Co.'s No. 15 Jennings-Haywood, 108 ft. E, 368 ft. S of NW cor. Sec. 41-9s-2w.
S.D. 1,600 ft.
Yount Lee Oil Co.'s No. 7 Houssiere-Latiole.
T.D. 7,716 ft.; I.P. 400 bbls. per day.

LAKE BARRE—TERREBONNE PARISH

Texas Co.'s No. 36 Lake Barre.
Drlg. shale 3,067 ft.
Texas Co.'s No. 14 Lake Barre.
Sidetracking at 3,915 ft.
Texas Co.'s No. 15 Lake Barre.
T.D. 3,786 ft.; P.B. and sidetracked at 3,297 ft.

LAKE PELTO—TERREBONNE PARISH

Texas Co.'s No. 12 Lake Pelto.
T.D. 6,248 ft. in oil sand.

LEESVILLE—LAFOURCHE PARISH

Gulf Prod. Co.'s No. 6 Allen Lane, Sec. 24-21s-29e
T.D. 3,515 ft.; bailed dry; R.U. to deepen.
Gulf Prod. Co.'s No. 12 Bernard, Sec. 25-21s-22e.
Location.
Gulf Prod. Co.'s No. 10 Bernard, 1,833 ft. E, 958 ft. S of NW cor. Sec. 25-21s-22e.
Derrick.
Emerald Pet. Co.'s No. 10, State, west bank, 300 ft. S of well No. 1.
Location.
Emerald Pet. Co.'s No. 11 State, east bank.

227 ft. N of well No. 1.
Location.
Emerald Pet. Co.'s No. 12 State, east bank. 250 ft. S of well No. 1.
Location.
Texas Co.'s No. 34 La. Land & Exploration Co.
T.D. 3,712 ft.; P.B. to 1,215 ft.
Texas Co.'s No. 32 Leesville, 890 ft. S, 2,484 ft. W of NE cor. SE¼ Sec. 27-21s-22e.
Location.
Texas Co.'s No. 33 Leesville, 1,590 ft. S, 2,484 ft. W of NE cor. SE¼ Sec. 27-21s-22e.
Rig up.
Texas Co.'s No. 36 Leesville, 476 ft. S, 385 ft. E of NW cor. SW¼ Sec. 26-21s-22e.
Derrick.
Texas Co.'s No. 37 Leesville, 1,266 ft. N, 103 ft. W of SE cor. NE¼ Sec. 27-21s-22e.
Rig up.
Texas Co.'s No. 27 Leesville.
T.D. 4,289 ft.; attempting to make D.S. test.

LOCKPORT—CALCASIEU PARISH

Union Sulphur Co.'s No. 6 Moss, located between No. 2 and No. 5 (W.O.).
T.D. 6,668 ft.; set 450-ft. liner; washing in.

PORT BARRE—ST. LANDRY PARISH

Emerson Trotter's No. 3 Sabille, 650 ft. S, 200 ft. E from NW cor. of Sabille tract, Sec. 20-6s-6e.
16-in. csg. 610 ft.
Port Barre Oil Co.'s No. 2 Sybil, 3,080 ft. N easterly along section line, thence 55 ft. at R/A. to the east, Sec. 20-6s-5e.
S.D. 3,762 ft.

ROANOKE—JEFFERSON DAVIS PARISH

Classel et al's No. 1 La. Irrigation Mill Co., 695.5 ft. E and 475 ft. N of SW cor. Sec. 1-9s-4w.
Location.
Humble O. & R. Co.'s No. 1 Clayton, 2,223 ft. from S line, 440 ft. from E line, Sec. 10-9s-4w.
Coring shale 4,814 ft.
Humble O. & R. Co.'s No. 2 C. N. Taylor, 1,320 ft. E, 440 ft. S of NW cor. of SW¼ Sec. 12-9s-4w.
Rig up.
Humble O. & R. Co.'s No. 1 Nelson Thomas, 880 ft. W of No. 2 Kratzer, 440 ft. N and W of SE cor. of 200-ac. tract.
Coring shale 9,802 ft.
Humble O. & R. Co.'s No. 2-B Devilbiss, 1,127 ft. W of No. 1-B, 440 ft. S of N line of S½ of Sec. 11-9s-4w.
Cmtd. csg.; T.D. 9,336 ft.; P.B. to 7,934 ft.; perforated csg. 7,810-17 ft.
Shell Pet. Corp's No. 1 Jarnigan, 330 ft. E, 660 ft. S, NW cor. Sec. 12-9s-4w.
Coring for sand 9,980 ft.
Shell Pet. Corp.'s No. 1-B Kratzer, 660 ft. N, 330 ft. E of SW cor. of SW¼ Sec. 1-9s-4w.
Coring 8,556 ft.
Shell Pet. Corp.'s No. 4 Kratzer.
Reaming 7,539 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 812 fee.
Drig. sand 201 ft.
Union Sulphur Co.'s No. 800 fee.
Building derrick.
Union Sulphur Co.'s No. 811 fee.
Drig. rock 1,772 ft.
Union Sulphur Co.'s No. 3 Kelly.
Drig. shale and lime 6,409 ft.

WHITE CASTLE—IBERVILLE PARISH

Shell Pet. Corp.'s No. 8 Wilbert.
Drig. shale 4,245 ft.
Shell Pet. Corp.'s No. 1 White Castle Shingle Co., 1,830 ft. W, 100 ft. S from NE cor. of lease.
S.D. 4,234 ft.
Shell Pet. Corp.'s No. 1 Adams, 2,340 ft. N. 100 ft. E of SW cor. of lease.
Coring shale 8,204 ft.

MISCELLANEOUS WILDCATS
TEXAS
AUSTIN COUNTY

Deering & Kayser's No. 1 P. A. McClinton, 1,100 ft. from NW line and C NE and SW of 115-ac. tract in Thomas Bell Sur.
Drig. shale 1,796 ft.
Paul English et al's No. 1 Felix Guhn, 1,000 ft. S, 360 ft. E from NW cor. of 71-ac. tract, D. Chomel Sur., 1 mile SE of Kinney.
Rig up.

BRAZORIA COUNTY

Amerada Pet. Corp.'s No. 2 Houston Farms Dev. Co., 2,150 ft. SE, 5,800 ft. SW of N cor. of B.B.B.&C. Sur., in the Perry & Austin Sur.
Drig. sticky shale 2,120 ft.
George Strake's No. 3 Truska, 991 ft. W of No. 1, H.T.&B. Sur., Sec. 7.
S.D. 6,000 ft.
Showers & Moncrief's No. 1 Hughey, 5,500 ft. NW of discovery well, in center of Lot 18, H.T.&B. Sur., Sec. 29, Abst. 292.
Location.
Texas Co.'s No. 1 Freeport Sulphur Co., 2,764 ft. N, 1 deg., 40 ft. W and 1,134 ft. S, 33 deg., 20 ft. W of NW cor. of S. F. Austin Sur., Abst. No. 35, being in the Conception Areola Sur.
Drig. heaving shale 4,360 ft.
Quintan Pet. Co.'s No. 1-B G. L. Wood, 2,778 ft. from W line and 5,555 ft. from S line of 1,483-ac. lease, Thomas Alsbury Sur.
Rig up.

CALHOUN COUNTY

Continental Oil Co.'s No. 2 American National Realty Co., 660 ft. from NW line, 660 ft. from NE line of Sec. 6, Blk. C, Pedro Garcia Sur.
S.D. 6,522 ft.

CHAMBERS COUNTY

R. A. Mason et al's No. 1 R. M. White, 3,125 ft. N of S line, 466 ft. W of E line of James McGahey Sur.
Spudded.

COLORADO COUNTY

Clyde Creighton et al's No. 1 Witte, 150 ft. S and E of most westerly NW cor. of H. White Sur.
Location.
Coyle & Concord's No. 1 fee, 550 ft. from N line, 1,950 ft. from E line of Sec. 45, I.&G.N. Sur.
Location.
Trans State Oil Co.'s No. 1 Frank Weinkuhn, 150 ft. E of W line, 150 ft. S of N line of 150-ac. tract, F. A. Zimmershield Sur.
Spudded.

FAYETTE COUNTY

Lewis Franklin's No. 1 V. Dybala, center of 75-ac. lease, A. Thompson Sur.
Location.

FORT BEND COUNTY

C. B. Bunte's No. 1 Winston, 1,495 ft. E of W line, 2,381 ft. N of S line of 350.6-ac. tract, S. Isaacs Sur.
Location.
W. A. Shafer et al's No. 1 V. B. Bortash, 693 ft. SW of NE line and 1,003 ft. NW of SE line of Sec. 52, H.&T.C. Sur.
S.D. 3,900 ft.
George White et al's No. 1 M. M. Cravins, 1,000 ft. from N, 300 ft. W of SW cor. of survey, B.B.B.&C. Sur. No. 8.
Rig up.

GALVESTON COUNTY

Coast Pet. Co.'s No. 1 Stewart, 3,416 ft. S, 200 ft. E of NW cor. of 143-ac. tract, W. K. Wilson Sur.
Drig. shale 6,550 ft.
Gillock Pet. Co.'s No. 2 Maco Stewart, 900 ft. N and 150 ft. W of No. 1, Alex Farmer Sur.
T.D. 1,500 ft.; S.D.

GRIMES COUNTY

Hubert Holt et al's No. 1 Simon Fuqua, 1,200 ft. N of S line and 400 ft. W of E line of 177-ac. lease and survey, Moses Evans Sur.
S.D. 3,080 ft.
Dr. Marshall et al's No. 1-B Todd, 300 ft. from E line and 175 ft. from N line of 150-ac. tract in extreme NW cor. of county (25 ft. N of No. 1).
Drig. shale 2,280 ft.
Patton et al's No. 1 Yeager, 1,000 ft. W of E line, 170 ft. S of N line of 53-ac. tract and survey, A. Ruscolle Sur., NW of Iola Sur.
S.D. 1,000 ft.

HARDIN COUNTY

Kirby Pet. Co.'s No. 3 Kirby, 2,330 ft. W, 9,350 ft. S of NE cor. of J. Stephenson Sur.
Abd. 5,715 ft.

HARRIS COUNTY

Graham & Gardner's No. 1 Hager, 150 ft. out of SE cor. of 736.8-ac. tract, J. W. Clepton Sur.
Drig. shale 1,370 ft.
Herbert-Still & Hooper's No. 1 Racker, 990 ft. E of W line, 4,290 ft. N of S line of J. C. Ogburn Sur.
Drig. shale and lime 3,103 ft.
C. C. Foster et al's No. 1 H. K. Johnson, 2,000 ft. from S line and C of E and W lines of G.C.&S.F. Sur.
Drilled 25 ft. and S.D.
Stanolind Oil & Gas Co.'s No. 1 F. J. Burkey, C of Lot 15, Blk. 105, H.T.&B. Sur. No. 5.
Location.
Stanolind Oil & Gas Co.'s No. 1 C. F. Gibson, C of Lot 9, Blk. 41, H.T.&B. Sur. No. 5.
Location
Stanolind Oil & Gas Co.'s No. 1 J. W. Horlow, C of Lot 10, Blk. 82, H.T.&B. Sur. No. 5.
Location
Stanolind Oil & Gas Co.'s No. 1 Ed Wells, C of Lot 3, Blk. 146, H.T.&B. Sur. No. 5.
Location.
Stanolind O. & G. Co.'s No. 1 fee land, 330 ft. S, 300 ft. E of NW cor. of 20-ac. tract Sur., Sec. No. 5.
T.D. 5,000 ft.; 9⅝-in. csg. 4,831 ft.; tested S.W.; P.B. 4,685 ft.; flowed 161 bbls. of net oil in 24 hrs.; T.P. 765 lbs.; C.P. 1,000 lbs.
West Prod. Co.'s No. 1 Woodburn, 1,320 ft. E of W line, 2,145 ft. N of S line of survey, A. Whitlock Sur.
Drig. shale 7,625 ft.

JACKSON COUNTY

A. M. Harris' No. 1 Whitley, 800 ft. out of SE cor. of F. G. Keller Sur.
Location.

JASPER COUNTY

Marathon Oil Co.'s No. 1 Jasper County Lumber Co., 330 ft. out of NE cor. of 176.5-ac. tract 5 miles SE of Jasper, T. C. Holmes Sur.
Rig up.

JEFFERSON COUNTY

Humble O. & R. Co.'s No. 1 J. T. White, 330 ft. out of SW cor. of T.&N.O.R.R. Sur. No. 370.
Location.
Sun Oil Co.'s No. 1 Hebert & Braussard, 6,890 ft. NW along SW line and 660 ft. NE at right angles to SW line, B. Blackman Sur., Abst. No. 2.
18⅝-in. csg. 41 ft.; T.D. 57 ft.

LIBERTY COUNTY

R. M. Bruner et al's No. 1 N. Bell, 150 ft. from N line and 150 ft. from W line of Bell's 187-ac. tract, H.&T.B. Sur. No. 4.
Rigging up.
Extension Oil Co.'s No. 1 J. A. Lovett, 330 ft. from E and 600 ft. from S line of lease, P. P. Deevers Sur.
S.D. 4,048 ft.
J. W. Frazier et al's No. 2 Lynott & Buffum, 466 ft. from N and E lines of 60-ac. tract in extreme SE part of survey, James Robeson Sur.
Drig. shale 6,301 ft.
Liberty-Independent Oil Co.'s No. 1 J. M. Neal, 3,550 varas from E line and 505 varas from N line of Samuel Strong Sur.
S.D. 4,110 ft.
A. L. Maxwell's No. 1 M. P. Hinchliff, 300 ft. from E line and 1,000 ft. from the N line of survey, H.&T.C. Sur., Sec. 10s.
Reaming; T.D. 5,474 ft.
Thomas et al's No. 1-A Eicke, 660 ft. from W line and 2,250 ft. from S line of tract in Green Sur.
T.D. 5,047 ft.; 6⅝-in. csg. at 5,029 ft.
Turnbull & Irwin's No. 1 Cox, 1,000 ft. from the E line and 200 ft. from S line of 108.2-ac. lease, F. J. G. Smiley Sur.
Location

MATAGORDA COUNTY

Continental Oil Co.'s No. 1 Feife, J. S. Criswell Sur., 3,000 ft. E of W line, 2,800 ft. N of S line of survey.
T.D. 4,995 ft.; fishing.
Dr. Griffith's No. 1 fee, 3,000 ft. from E line and 3,000 ft. from W line of Wm. H. Bell Sur.
Rig up and S.D.
Helmerich & Payne's No. 1 Hawkins, 850 ft. S, 70 deg. W of Cockburn Oil Co.'s No. 6 Hawkins.
13⅜-in. csg. 1,597 ft.; T.D. 1,700 ft.
Horace M. Smith, Inc.'s No. 1 Wadsworth ranch, 150 ft. out of S cor. of Lot No. 3, Blk. S. R. Fisher Sur.
T.D. 8,418 ft.; 7-in. csg. 8,376 ft.; re-setting screen to test; flowing from 5 to 10 bbls. of oil per day.

MONTGOMERY COUNTY

Travis Baker et al's No. 1 Foster Estate, 1,200 ft. E of W line and 700 ft. S of N line of Blk. No. 50, J. M. De La Garza Sur.
Derrick.
Charles B. Gohlson's No. 1 Aaron Parks, 250 ft. from S line, 200 ft. from E line of Parks 139-ac. tract, J. Lindley Sur.
7-in. csg. cmtd. at 3,721 ft.; T.D. 3,773 ft.
Paul Sanderson, trustee's No. 1 Texas Long Leaf Lbr. Co., 2,500 ft. W, 1,750 ft. S of NW cor., Wm. Barker Sur.
Rig up.

ORANGE COUNTY

Blue Line Oil Co.'s No. 1 Godwin, Richard Ballew Sur., 300 ft. from E line and 150 ft. from NE line of Godwin 20-ac. tract.
S.D. 2,770 ft.
Ellis Oil Co.'s No. 1 G. W. Pell, 100 ft. from N and 300 ft. from W line of Pell tract in the J. M. Henerie Sur.
T.D. 2,055 ft.
Dick Schwab's No. 1 East Texas Canal Co., 330 ft. from the N and W lines of 234-ac. tract, John Jett Sur.
Drig. shale 5,747 ft.

POLK COUNTY

Howard Daily et al's No. 1 Z. B. Knox, 1,450 ft. W and 1,920 ft. S of NE cor. of F. Chairs Sur., 16 miles NE of Corrigan.
S.D. 60 ft.
J. F. Anderson's No. 1 E. L. Duke (O.W.D. D.), 400 ft. from E and 350 ft. from S of SW cor. of P. Michelick 50-ac. lease, Abst. 59, P. J. Mineral Sur.
Waiting on a new mud pump; T.D. 5,804 ft.
J. W. Leggett et al's No. 1 Bergman, C of 294-ac. tract, or 1,100 ft. W of H.E.&W.T. R.R., J. T. Pinkney Sur.
Rig up.
Dick Schwab's No. 1 Lynch, 330 ft. out of NW cor. of 200-ac. tract in the George Jameson Sur.
Location.

REFUGIO COUNTY

Cecil Hagen et al's No. 1 Edith Clarkson, 1,736 ft. from N line, 3,820 ft. from E line of J. Coughlin Sur.
Location.

ROBERTSON COUNTY

H. L. Patton's No. 1 H. Ely, located on a 616-ac. tract, A. Manchola Sur.
Drig. shale 3,096 ft.

SAN JACINTO COUNTY

Turnbull & Irwins' No. 1 K. Moore, 5,400 ft. from W line, 1,250 ft. from S line of lease, T. F. De Rumayor Sur.
Drig. shale 1,030 ft.
Ralph Sturam et al's No. 1 R. B. Love et al, 475 ft. S of N line and 2,000 ft. W of E line of 177-ac. tract, Drury McGee Sur.
Moving in rig.

TRINITY COUNTY

Gulf Prod. Co.'s No. 2 Trinity County Lbr. Co., 1,287 ft. S, 1,480 ft. S of the SW cor. of the Stanley & Barrett 99.5-ac. tract, Trinity County School Land Sur.
Drig. shale and sand 2,527 ft.

VICTORIA COUNTY

Eastern States Pet. Co.'s No. 1 Henderson & Pickering, 330 ft. out of NW cor. of Lot 19, Wm. Rupley Sur.
Coring shale 5,520 ft.
Costa Oil Co.'s No. 1 Schovjasa, 330 ft. out of N cor. of Lot No. 14, Wm. Rupley Sur.
Resetting screen 4,790 ft.
Eastern States Pet. Co.'s No. 1 Williams, 330 ft. out of S cor. of 130-ac. tract, E. Benavides Sur.
Rig up.
L. A. Gillespie and Superior Oil & Gas Co.'s No. 1 R. W. Brandt, 330 ft. from NE line, 330 ft. from NW line of tract No. 11, Henderson & Pickering Subd., Wm. Rupley Sur.
Drig. shale 5,620 ft.
L. A. Gillespie and Superior Oil & Gas Co.'s No. 1 John Janis, 330 ft. from SW line of survey and on the SE line of Nancy Dean Sur.
Cmtd. perforated csg. 800 ft.
Gillespie and Superior O. & G. Co.'s No. 1 Farber, 330 ft. from N and E lines of Lot 6, Nancy Dean Sur.
Abd. 6,265 ft.
Magnolia Pet. Co.'s No. 1 Henderson & Pickering, E offset to discovery well, Wm. Rupley Sur.
Coring shale 5,330 ft.
E. L. Smith Oil Co.'s No. 1 Henderson & Pickering, 330 ft. out of SE cor. of Lot 75, J. M. Bronson Sur.
Coring 4,700 ft.

WALLER COUNTY

Diadem Oil Co.'s No. 1 Urban Estate, 1,100 ft. from the N line, 800 ft. from W line of survey.
Drig. shale 1,955 ft.

WASHINGTON COUNTY

Powers Prod. Co.'s No. 1 Boenker, 550 ft. S, 350 ft. W from NW cor. of Dodson 160 acres, J. Newman Sur.
Drig. shale 1,625 ft.

WHARTON COUNTY

Texas Co.'s No. 2 Pierce Estate, 2,425 ft. S, 31 degrees 20 ft. E, 4,400 ft. N, 58 deg. 40 ft. E from W cor. of Pierce Estate Land, I.&G.N.R.R. Sur. No. 39.
Tested 550 lbs. pressure on D.S. test from 4,686-99 ft.; cored oil sand to 4,703 ft.

SOUTH LOUISIANA
ACADIA PARISH

Continental Oil Co.'s No. 1 T. Ortego, 990 ft. S, 500 ft. E of NW cor. SW¼ Sec. 28-7s-2w.
Drig. shale 6,203 ft.
Humble O. & R. Co.'s No. 1 American Rice Mills, 660 ft. S and 1,320 ft. W from NE cor. Sec. 27-10s-1e.
Drig. shale 9,125 ft.

AVOYELLES PARISH

Southern State Pet. Co.'s No. 1 Boyette, 330 ft. N and 330 ft. E of SW cor. Sec. 28-3n-5e.
S.D. 3,887 ft.

BEAUREGARD PARISH

Chew & Kirby's No. 1 Long Bell Lbr. Co., 330 ft. S and W of C of NE¼ Sec. 36-3s-8w.
Drig. shale 5,396 ft.
Richardson & Martin's No. 1 Southwest Lbr. Location.

CALCASIEU PARISH

Fred Oil Co.'s No. 2 Faizst, 262 ft. E and 83 ft. S of NW cor. SE¼ Sec. 26-8s-10w.
S.D. 3,525 ft.
Fohs Oil Co.'s No. 1 Airhart, 275 ft. W and S of NE cor. SW¼ SE¼ Sec. 14-9s-8w.
Building road.
Fohs Oil Co.'s No. 1 Wasey, 275 ft. each way out of the NE cor. SW¼ of SE¼ Sec. 12-19s-8w.
10¾-in. csg. 1,362 ft.
Nicholas McCaleb's No. 1 Grey, 2,200 ft. S 1,200 ft. E of NW cor. Sec. 22-8s-13w.
S.D. 850 ft.
Texas Co.'s No. 5 Nickerson, 2,826 ft. N, 3,192 ft. W of SE cor. of Sec. 12-19s-8w.
Location.
Texas Co.'s No. 6 Nickerson, 287 ft. N, 289 ft. W of SE cor. of NW¼ Sec. 12-19s-8w.
Location.
Texas Co.'s No. 3 Nickerson, 2,739 ft. N, 3,750 ft. W of SE cor. Sec. 12-19s-8w.
T.D. 6,746 ft.; 6⅝-in. csg. 6,734 ft.
Union Sulphur Co.'s No. 2 Mayo Reeves.
Drig. shale 6,894 ft.
Union Sulphur Co.'s No. 7 State, 1,316 ft. N and 199 ft. E of the SW cor. of Sec. 12-9s-8w.
Location.
Union Sulphur Co.'s No. 9 State, NW offset to Texas Co.'s No. 2 Nickerson.
Drig. sandy shale 6,036 ft.
Union Sulphur Co.'s No. 1 Castle, 326 ft. N and E of NW Sec. 13-9s-8w.
Fishing 6,473 ft.
Union Sulphur Co.'s No. 1 Buhler, 1,465 ft. N and 425 ft. W of SE cor. Sec. 11-9s-8w.
Drig. sandy shale 6,570 ft.
Union Sulphur Co.'s No. 6 State.
Drig. lime 7,310 ft.
Union Sulphur Co.'s No. 2 Powell, 1,279 ft. S, 1,621 ft. E of NW cor. Sec. 12-9s-8w.
Drig. sandy shale 3,042 ft.
Wheeler Oil Corp.'s No. 1 School Lot, 1,708 ft. E, 1,325 ft. N of SW cor. Sec. 16-9s-7w.
S.D. 3,720 ft.

CAMERON PARISH

Magnolia Pet. Co.'s No. 1 J. B. Broussard, 330 ft. E and S, out of NW cor. of the SW¼ of SE¼ of Sec. 13-12s-9w.
T.D. 7,244 ft.; P.B. from 6,112 ft.; drig. shale 6,390 ft.
Steinberger Pet. Co.'s No. 1 Drew, 330 ft. out of NW cor. NE¼ of Sec. 26-10s-11w.
Location.

EAST BATON ROUGE PARISH

Superior Oil & Prod. Co.'s No. 1 Duplanter-Community, 1,500 ft. westerly along the N line from the NE cor. of D. A. and E. A. Duplanter's 130.7-ac. tract, thence 330 ft. at R/A.
Cutting and pulling stuck D.S. at 7,085 ft.; T.D. 7,747 ft.

EAST FELICIANA PARISH

Thompson Creek Oil Co.'s No. 1 Fannie Noland, 2,600 ft. E and 1,580 ft. N of SW cor. Sec. 70.
S.D. 1,589 ft.

EVANGELINE PARISH

Basile's No. 1 Haas, 1,680 ft. S of N line, 350 ft. W of E line of NE cor. Sec. 14-6s-2w.
Coring shale 6,117 ft.
Little Pigeon Oil Co.'s No. 1 McHugh, 1,300 ft. S, 229 ft. W of the NE cor. Sec. 26-12s-10e.
Location.

IBERIA PARISH

Texas Co.'s No. 1 State Fausse Point.
Drig. shale 4,942 ft.

JEFFERSON DAVIS PARISH

Howard Naylor et al's No. 1 Johnson-Bordeaux, 1,734 ft. N, 52 deg. N, 45 min. E, and 1,853 ft. S, 37 deg. 15 min. E out of SW cor. Sec. 39-10s-3w.
Location.

JEFFERSON PARISH

Lincoln Oil Co.'s No. 1 Rigaud, Sec. 28-21s-25e.
T.D. 7,039 ft.; abd.

LAFOURCHE PARISH

Southern Sulphur Corp.'s No. 1 D. L. Lagraize, 800 ft. E of NW cor. of Lot 7, thence 250 ft. S of Sec. 26-21s-22e.
Spudded and shut down.

ST. BERNARD PARISH

Emerald Pet. Corp.'s "Shell Beach Properties" No. 1, on S edge of Bayou Louis, Sec. 31-12s-15e.
Drig. shale 4,610 ft.

ST. MARTIN PARISH

Texas Co.'s No. 7 St. Martin Land, 2,042 ft. N, 500 ft. W of SE cor. of Sec. 17-8s-7e.
Drig. shale 1,086 ft.

VERMILLION PARISH

Moore Bros.' No. 1 Brussard, 350 ft. S of N line, 250 ft. E of W line, NE cor. Sec. 32-11s-3e.
S.D. 4,056 ft.

NEW AND IMPROVED EQUIPMENT

Many Advantages Embodied In New Type of Oil Thief

The Master Gauge oil thief, manufactured by E. W. P. Manufacturing Co., Stroud, Okla., and distributed by W. L. Walker Co., 800 South Main Street, Tulsa, offers features of value. The body is made of cast aluminum, which is strong, light and quick to adjust its temperature. The base and all fittings encountering strain or wear are made of brass. All metals are rustproof and, according to the manufacturer, will resist corrosion from any chemicals used in production. The Master Gauge oil thief when placed in any position will not roll or topple over.

Rods C are adjustable and will extend as much as 8 inches below the bottom of the thief. These are pointed and are to test the depth of sand or rotary mud where the bottom of the thief would not easily penetrate.

Two rods C are used—one on each side—to give balance and spaced 3½ inches apart to avoid dropping into drawoff line.

Rods C lock with key D to automatic trip E, which hooks into end of spring F. Spring F forces valve H to seat, leakproof into base B. When valve H is open it forms an open bottom to body A.

Thus rods C automatically test the depth of the sand and furnish an automatic trip for valve H.

Rods C, when extending 8 inches below bottom of thief, enable the gauger to take a sample at the exact pipe line opening.

Lever G is for the sole purpose of enabling the gauger easily to open valve H. This eliminates rough handling of the thief.

Hook I acts as a stop for rods C and also enables the gauger to hang the thief in the tank hatchway while he is taking gravity reading.

Rods J are for tripping thief in center of tank by use of single rope.

CHEMICAL COMPANIES MERGE

The Dow Chemical Co., Midland, Mich., and the Cleveland-Cliff Iron Co., Cleveland, Ohio, have joined in organizing the Cliffs-Dow Chemical Co. The Cleveland-Cliffs Iron Co. has operated a chemical plant in Marquette, Mich., for 30 years. The new company will manufacture chemicals derived from wood, a field in which both companies have been experimenting and carrying on research work. The board of directors consist of Willard Dow, M. E. Putnam, E. W. Bennett, L. I. Doan, and C. J. Strosacker representing the Dow Chemical Co.; William G. Mather, E. G. Greene, A. C. Brown, and V. P. Geffine, representing the Cleveland-Cliffs Iron Co.; and E. T. Olson, present manager of the Cleveland-Cliffs Iron Co. chemical plant. The officers of the Cliffs-Dow Chemical Co. are: Willard Dow, president; E. B. Greene, vice president; E. W. Bennett, treasurer; V. P. Geffine, secretary, and E. T. Olson, general manager.

Among the Equipment Houses

The California office of E. B. Badger & Sons Co. has been moved from Los Angeles to 111 Sutter Street, San Francisco.

—

Robert F. Koch, formerly with Foster Wheeler Corp., is representing Henry Vogt Machine Co., Louisville, Ky., as boiler sales engineer, with headquarters at 1005 Rockefeller Building, Cleveland, Ohio.

—

Lee Wright has been appointed sales representative for Republic Steel Corp., with headquarters at 401 Atlas Building, Salt Lake City, Utah.

—

Jones & Laughlin Steel Corp.'s subsidiary, Jones & Laughlin Steel Service, Inc., has purchased the fabricating shop, warehouse and business of the National Bridge Works of Long Island City, N. Y. The new properties will be operated under direction of Harry B. Royer, formerly president and manager of National Bridge Works.

—

Hercules Motors Corp. has moved its West Coast office from 613 Russ Building, San Francisco, to 523 Trans-America Building, Seventh and Olive Streets, Los Angeles. Oliver Kelly is direct factory representative.

—

John E. King, assistant treasurer of American Radiator Co. since 1927, has been appointed treasurer, succeeding Donald M. Forgan, who will continue as vice president.

—

Max E. Landry has opened an office at 533 Mayo Building, Tulsa, representing Foote Bros. Gear & Machine Co., Morse Chain Co., Ideal Electric & Manufacturing Co., Pennsylvania Transformer Co., Reeves Pulley Co., and Pyott Foundry & Machine Co.

—

The name of Harrisburg Pipe & Pipe Bending Co. of Harrisburg, Pa., has been changed to Harrisburg Steel Corp. to make it represent more accurately the operations and products of the company. The company was started 40 years ago as a small pipe bending shop.

—

Election of Albert C. Bruce, president of the United States Hoffman Machinery Corp., to the board of directors of the Worthington Pump & Machinery Corp., is announced.

—

Black, Sivalls & Bryson, Inc., have concluded arrangements with Continental-Emsco Co., Inc., 30 Rockefeller Plaza, New York, to handle the latter's line of separators, flow treaters, safety heads and other products in the export field.

—

General Refractories Co., Philadelphia, Pa., has appointed Shadbolt & Boyd Co. as dealer agent in the Milwaukee, Wis., area.

Lunkenheimer Introducing Corrosion Resistive Valve

In oil refining processes are many corrosion resistance problems for which the new Causul metal valves, recently placed

on the market by the Lunkenheimer Co., Cincinnati, Ohio, are particularly adapted. They have been used successfully for such typical services as sludge acids, recovery acids, wash liquors, certain distillates, sour crudes, gases and gasolines, sulphuric acid and caustics.

Causul metal is an austenitic ferrous alloy, particularly resistant to corrosion, the development of several years' research and field tests to meet the demand for better corrosion resistance per dollar invested. In addition to gate valves in screwed and flanged patterns, the line includes a Causul metal indicator cock with diamond shape port for acid sludge and oil-burner service. A description booklet is available.

75-Ampere Arc Welder Is Put on Market by Hobart

The new 75-ampere Hobart arc welder announced by the Hobart Co., Troy, Ohio, embodies practically the same de-

sign and construction as the larger models. Rated at 75 amperes, 25 volts, being designed especially for light gauge welding, it has a welding range of 15 to 125 amperes in three steps and is said to perform exceptionally well on 25-gauge and heavier, using one-sixteenth, three-thirty-seconds or one-eighth inch electrodes, either bare or coated. It is powered by a 3-horsepower electric motor.

This model, which is expected to find acceptance in plants working with light gauge metal, comes completely equipped with starting switch, polarity change switch, dual remote control, double reading voltmeter and double reading ammeter.

Men Well Known in the Equipment Field

Walter H. Wiewel has been appointed manager of sales of tubular products for the Jones & Laughlin Steel Corp. to fill

WALTER H. WIEWEL

the vacancy recently created by the death of F. D. Grunder, who held that position since 1916.

Mr. Wiewel since 1932 has been manager of tube sales of the Timken Steel & Tube Co. of Canton, Ohio. He first was employed in 1910 by the Cambria Steel Co. in its Cleveland office. In 1914 he became associated with the United Steel Co., Canton, and in 1918 was appointed assistant general manager of sales of the successor company, the United Alloy Steel Corp. Mr. Wiewel was appointed manager of the New York district office of the Standard Seamless Tube Co. in 1925 and later joined the Timken Steel & Tube Co.

New Compound by Mepham Reduces Viscosity of Mud

Meptol, an organic compound for reducing the viscosity of drilling mud, has been placed on the market by Geo. S. Mepham Corp., manufacturer of Colox. Meptol's chemical components are said to result in a maximum reduction of mud viscosity with a minimum gel reaction. It is sold to the trade in concentrated form to permit easy transportation, packaged in cartons of 5-pound size, net weight, six cartons to the case.

As with other chemical compounds for reducing viscosity, various strength solutions are required for treating muds of different compositions. An average solution for treating formational mud is 50 gallons of water, 3 pounds of caustic soda and 5 pounds of Meptol. Other formulae cover a range up to 10 pounds of caustic soda and 10 pounds of Meptol to 50 gallons of water.

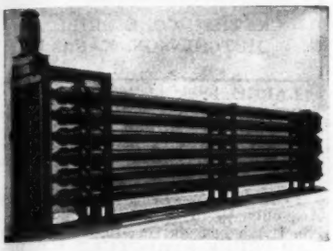
LIGHT REFRACTORY CONCRETE

A new type of Firecrete for casting light-weight refractory concrete on the job has been announced by Johns-Manville. This new product is composed chiefly of high alumina clay calcined at high temperatures. The resulting concrete

weighs only 75 pounds per cubic foot. Under continuous operation at 2,400° F., shrinkage is so slight as to be negligible. It is said to have withstood the most severe alternate heating and cooling tests without spalling. L. W. Firecrete is 40 per cent lighter than fire brick and has 40 per cent lower heat storage capacity.

Many Advantages Found in Direct-Expansion Chiller

The Vogt direct-expansion chiller was developed by Henry Vogt Machine Co., Louisville, Ky., to meet refinery demand for the extremely low temperatures required for complete separation of wax from the oil in chilling wax distillate.



Patent No. 1,920,570

The liquid refrigerant is maintained at a predetermined level in the annular space of each pipe section regardless of the rapidity of evaporation. A constant contacted area of surface by the refrigerant is obtained, thereby maintaining maximum absorption efficiency. The horizontal position of the pipe sections and the unique design (patented) permits the passage of the gaseous refrigerant to the low side of the refrigerating machine without displacing any of the liquid refrigerant in the annular spaces of the pipe sections. The refrigerant gas is discharged from each pipe section so that the maximum expansion of the refrigerant and consequent minimum temperatures are obtained in each pipe section. This design is a distinct departure from that in which the liquid refrigerant is expanded into the bottom section and fed serially upward through the unit.

Vogt direct-expansion chillers, according to the manufacturer, have the following advantages: (a) The overall efficiency of the plant as a whole is greater because of the direct transfer of heat between the ammonia refrigerant and the oil to be cooled. Brine is eliminated as an intermediate cooling medium; (b) less surface is required for a given duty because the heat transfer rate is greater between the oil and the ammonia refrigerant; (c) less power is required for pumping the oil because less surface is traversed; (d) the elimination of an intermediate cooling medium saves pumping power; (e) no investment is required for a brine pump, motor and brine cooler.

Lincoln Offers Welder for Use on Lighter Materials

A new, small motor generator type of arc welding machine is announced by the Lincoln Electric Co., Cleveland, Ohio. This machine brings the advantages of arc welding to automobile repair shops, sheet metal and fabricating shops and others called upon to weld thin-gauge materials. This new unit, the SA-100, opens up a new field of application for arc welding, since it delivers as low as 30 amperes at the arc without use of auxiliary devices.

The new SA-100 is of motor-driven type, with a current range of 30 to 125 amperes. The generator is of single operator variable voltage type with 100 ampere NEMA rating. Easy welding is assured by patented dual control which provides independent adjustment of open circuit voltage and welding current. The motor installed is the Lincoln "Linc-Weld" 5-horsepower squirrel cage induction type for across-the-line starting. The SA-100 is 20 inches long, 16 inches wide and 40 inches high.

Notes About Trade Literature

Harbison-Walker Refractories Co., of Pittsburgh, Pa., has for distribution three folders describing three types of high-temperature bonding mortars, Thermolith, Firebond and Harwaco Bond. Each folder contains a list of applications for which the bonding mortar is suited.

—

The Mine Safety Appliances Co., Pittsburgh, Pa., has prepared an illustrated bulletin describing its complete line of safety signs.

—

"Something New in Core Drills" is among articles in the current number of Industrial News, published by Gates Rubber Co., Denver, Colo.

—

The type SSU pumping unit is described and illustrated in a bulletin issued by Allis-Chalmers Manufacturing Co., Milwaukee, Wis.

—

A bulletin prepared by S. R. Dresser Manufacturing Co., Bradford, Pa., gives detailed information regarding the new Dresser compression coupling.

—

A booklet of 30 pages discussing the Philadelphia Limitorque Control for the power operation of valves is obtainable from the Philadelphia Gear Works, Erie Avenue and G Street, Philadelphia, Pa.

Five circulars announced by International Harvester Co., Chicago, describe five McCormick-Deering power units, one of which is of the Diesel type.

—

Catalog 35, now ready for distribution by Taylor Forge & Pipe Works, Chicago, is an indexed volume of 96 pages covering that company's line of flanges, seamless steel fittings for welding, flange unions, etc.

—

A bulletin distributed by Lehmann Machine Co., St. Louis, Mo., contains detailed information regarding its new Hydratrol lathe.

—

Binks Manufacturing Co., 3114-40 Carroll Avenue, Chicago, announce publication of a new eight-page, two-color, spray nozzle bulletin, No. 50.

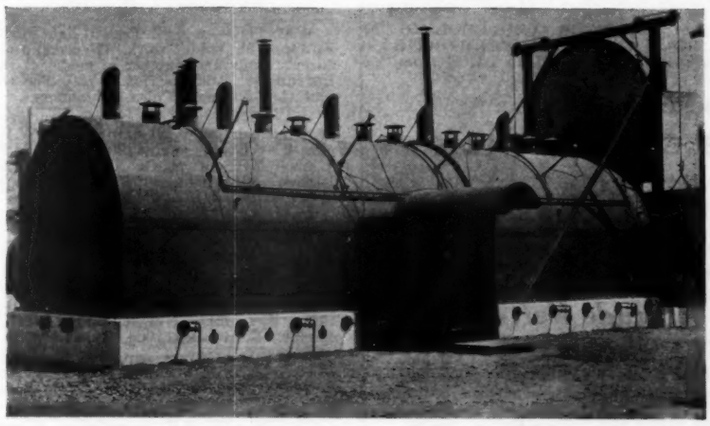
—

Walworth Hi-Test cast-iron pipe for water and gas is the subject of a six-page illustrated bulletin ready for distribution by Walworth Co., 60 East Forty-second Street, New York.

—

"Flow Line Treatment Now a Reality" is the title of an interesting article in the current number of The Electric Dehydrator, published by Petroleum Rectifying Co. of California, Los Angeles.

Innovations in Furnace Design and Stress Relieving



By R. B. MILLARD

When a furnace designer disregards precedents and uses unconventional materials, interest is aroused. Such a unit was recently completed for the National Tank Co. of Tulsa, for stress-relieving oil and gas separators and other fusion-welded vessels as prescribed by the A.S.M.E. and A.P.I. individual and combined codes.

The furnace has a sliding door, circular arch, double, flue-jacketed wall, steel casing, is bottom-fired and contains no firebrick. The furnace itself is 7 feet inside diameter by 32 feet long.

The furnace proper was poured between steel forms and cast in one piece from an airsetting refractory material good for a temperature up to 2,700° F. In all, 57,000 pounds of refractories were used making the furnace, one of the largest structures ever cast from this type of material.

Circular vessels may be centered in the furnace with the metal equally distant from the radiant surface of the refractory walls. The entire structure is sealed from the weather and from air infiltration by a welded steel casing protected by Barna-Lite, a high-temperature enamel.

Bottom firing was preferred to top firing because the 12 high-pressure gas burners could be lighted from their pilots and regulated from the ground, the gas flames could be directed to hug the walls, thereby guarding the vessel against flame impingement and preheated air is used in the burners.

For special cases of annealing, where overshot firing is preferred, additional ducts are located in the side walls between the burners. In this circulation, the hot gases pass over and around the vessels and discharge directly into flues located just above and between the burners.

To insure even heating, vessels are loaded on saddles resting upon the refractory deck of the car. These saddles center the work regardless of diameter and permit a free circulation of hot gases below as well as above the work.

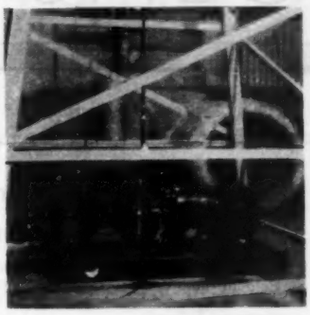
At the end of the holding period, the main gas valve is closed, dampers are shut and the vessel is allowed to soak, as prescribed by the code.

In a test run to get both hourly and total fuel consumption for the heat, the furnace, during the first hour, used 3,125 cubic feet, the second 3,992 cubic feet, and the third or holding period 1,287 cubic feet, making a grand total of 8,405 cubic feet. The average hourly rate was 3,162 cubic feet.

The furnace was erected by the Plibrico Jointless Firebrick Co. from an original design furnished by the writer.

Long-Stroke Pumping Unit Is Available for Inspection

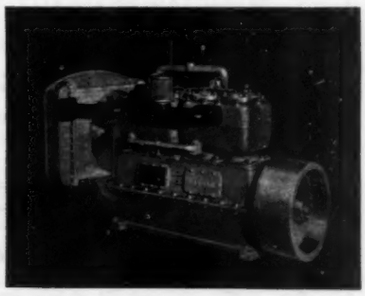
A miniature model of the long-stroke oil well pumping unit which is to be developed by J. G. Gillespie, Box 367, Longview, Tex., under method patent No. 1,928,532, has been completed and is available for inspection at Messner Electric Supply Co.'s warehouse, one block north of 1015 East Cotton Street, Longview.



Compressor Built to Give Even Distribution of Wear

Schramm two-stage compressors for belt and motor drive are built in five sizes. Compressors are similar in design and operating features to the two-stage portable compressors. They consist of low pressure and high pressure cylinders, cast in one block.

Air passing between stages enters a cross-flow type intercooler which reduces temperature almost to atmospheric. This intercooler also effectively serves as a filter, so that much cleaner air, free from vapors and heat, enters the air receiver.



Straightline construction of Schramm two-stage compressors provides an even distribution of wear on bearings and pistons designed to give longer life and greater efficiency. The detachable compressor block is embodied in the two-stage compressor, which facilitates easy adjustments, inspections and repairs with the minimum amount of time and expense. Bulletin No. 3411 (OL), containing detailed information, may be obtained by writing to Schramm, Inc., West Chester, Pa.

TWO NEW NETWORK CABLES

Two new network cables, one a leaded-type cable for use in ducts and the other a non-metallic cable for 600-volt service, have been made available by the General Electric Co. The leaded-type cable, a layer of glyptal-treated cloth covers the conductor and two layers of asbestos cover the glyptal cloth. Both the cloth and the asbestos are treated with Pyranol and the whole is enclosed in a lead sheath. Pyranol is a General Electric liquid dielectric which is non-inflammable, and will not give off explosive gases. The non-metallic cable features a glyptal compound sheath and a rubber compound insulation which is highly moisture-resistant. The properties of the glyptal sheath make this cable suitable for use in oily or alkaline locations where protection against abrasion is not necessary.

CLASSIFIED ADVERTISING

For Sale—Equipment

Dismantling Continental Oil Refinery, Sapulpa, Oklahoma

We offer for sale the entire plant and equipment at salvage prices. Seldom has such late type Topping and Cracking equipment been dismantled. A personal inspection will convince you. Some of the principal items as follows:

2—525 H.P. Babcock & Wilcox Water Tube Boilers, with Superheaters complete with extra equipment for efficient and economic operation. Guarantee insurance inspection. Rating 160 lbs. pressure.

2—National Transit Duplex Steam Hot Oil Pumps—Cap. 185 GPM—1000 lbs. pressure—900° F. Driven by Cross Compound Steam Engine, Condensing type. Pumps like new, original cost about $26,000 each. Will sacrifice at small fraction of new cost for quick sale.

1—Foster Wheeler Tube Still, Cap. 4000 bbls. (24 hrs.) looks like new.

14—Brown Electric Control & Recording Instruments, complete in every detail—Modern type—Equal in every respect to any instrument offered by new manufacturer—A chance to make a big saving.

22—Braun Heat Exchangers from 98 to 1000 sq. ft. surface. Floating head type—1, 2 and 4 Pass. Enough sizes to suit your requirements.

1—Complete Gas Absorption Plant—Cap. 100 bbls. day—Designed to operate up to 60 lbs. pressure—Includes full equipment.

1—Complete Continuous Treater and Doctor plant.

Many other items too numerous to mention such as FRACTIONATING BUBBLE TOWERS, CENTRIFUGAL WATER PUMPS powered by electric motors, AGITATORS, STEAM PUMPS, FIRE PUMPS, FIRE FIGHTING APPARATUS, CONDENSER AND COOLING BOXES, STEEL STORAGE TANKS, CRANE AND WALWORTH STEEL VALVES and FITTINGS, 100 miles of PIPE LINE from ¾" to 12", etc., etc.

WRITE FOR FULL DESCRIPTIVE CIRCULAR

BROWN-STRAUSS CORPORATION

Mail address, P. O. Box 220, Sapulpa, Oklahoma Phone 1476

Home Office and Plant—Kansas City, Missouri.

Liquidating Entire Altitude Refinery

Located at Chanute, Kansas, cost over a million dollars, operated until Feb., 1935. Will sell all or any item in plant consisting of 2—1000 bbl. each Jenkins Cracking units, 5000 bbl. capacity skimming unit, 2000 bbl. Winkler Koch pipe still. Over 100 pumps of all kinds, condenser boxes, heat exchangers, 150,000 bbls. of steel storage tanks from 100 to 55,000 bbls., many miles of all sizes pipe, 50,000 valves and fittings Oakite treated. Complete laboratory equipment, complete stock of new repair parts. Inventories furnished on request.

Wire, phone, or write W. C. Berry or H. J. Galamba.

SONKEN-GALAMBA CORPORATION

64 North Second Street, Kansas City, Kansas.

138,100 ft. 6" Standard 19 lb. pipe, line couplings and complete pumping station. 2—150 H.P. DelaVergne oil engines, direct connected to 2—6½"x 16" Gould triplex vertical pumps 1000 lbs. pressure. All necessary equipment. 2—24'x80' steel buildings with overhead cranes in each. All pipe and equipment in station same as new. Will sell all or any part. Located in Kay County, Oklahoma, 4 miles south of Tonkawa on highway 177. Cash or terms. Also offer 60,000' of 19" OD and 40,000' of 16" OD welded steel pipe. Wire, phone or write.

SONKEN-GALAMBA CORPORATION

64 North Second Street, Kansas City, Kansas.

5—Bessemer 80 H.P. Natural Gas engines, type 8, single cylinder, engines and compressors, 4 with 14"x20" cylinders and 1 with 7½"x20" cylinder, located at Magna City, Kansas. Price $600.00 each.
6—Bessemer 70 H.P. Natural Gas engines, belt driven, price $400.00 each.
5—Ingersoll-Rand Compressors, 2 cylinder, belt driven, with 12"x12" and 13½"x12" cylinders, price $400.00 each, located at Bloomington, Kans.
All of the above equipment guaranteed in A-1 condition and special price made on five or more.

SONKEN-GALAMBA CORPORATION

64 North Second Street, Kansas City, Kansas.

For Sale—Equipment

FOR SALE: Two 240 H.P., 180 R.P. M., 3 cylinder Busch-Sulzer Diesel engines in first-class condition with one 187 K W, 240 V, A. C. belt driven generator and direct connected exciter. These engines are now connected together in tandum but could be separated to operate as single units. Will sell either or both units. Price $12.50 per H.P. F.O.B. our plant. STANDARD-TILTON MILLING COMPANY, Dallas, Texas.

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air Compressor. Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list. Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio.

4—300 amp. Lincoln Engine driven welder. A-1 condition. Stationary type. Service Co., 3732 Cedar, Cleveland, Ohio.

NEW BELTING
at less than wholesale cost!
K. C. PIPE & SUPPLY CO.
Boulder at Cameron, Tulsa, Okla.

FOR SALE—USED GAS METERS
POSITIVE AND ORIFICE.
Geo. R. Milner, Okmulgee, Okla.

Equipment Wanted

WANTED—A used Transit light model equipped for stadia work. Give manufacturer's name and number of model of the instrument. Address Box G-720, The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED—12 in. stroke enclosed geared slush pump good for 1,000 W.P., one 4 or 6 cyl. engine 60 to 125 H.P. 1 rotary rig 6" shafts 200. 250 W.P. boilers, 4½ drill pipe, 14-16 pump. What have you?
R. R. NEWTON
Box 557, Laredo, Texas.

Situations Wanted

SALESMAN, 40, fifteen yrs. experience fishing, rotary, cable, production and titles, Tex.-Okla. Now employed. Wish change. B. G., Box 1064, Tyler, Tex.

Male Steno. 10 yrs. exp., age 32, single, seeks work with Oil man or Oil Co. Address Box G-721, The Oil and Gas Journal, Tulsa, Okla.

GRADUATE P.E. in refining, 2 yrs. exp. in major company refinery, specializing in stabilization and absorption. Unmarried. Address Box G-710, The Oil and Gas Journal, Tulsa, Okla.

GRAD. PET. ENGR. and exp. Stillman, desires position away from Gulf Coast. Have had op. exp. on var. types of vac. distillate units, shell type crude stills. Have also op. on gas absp. strip. units. Working now with maj. oil co. but have to make change due to climate's effect on wife's health. Address Box G-700, The Oil and Gas Journal, Tulsa, Okla.

Financing

PROSPECTUSES prepared and deals shaped up for registration or exemption under Federal Security Act. Fee basis. John Morris, Seventh Floor, 1237 Market St., Philadelphia, Pa.

MILLER, 604 W. Seventh St., Tulsa, Okla. Prospectus preparation and presentation. General assistance in all marketable matters. Correspondence invited.

Incorporations

CHARTERS — Delaware best, quickest, cheapest, most liberal. Free Forms. Colonial Charter Co., Wilmington, Del.

DELAWARE CHARTERS — Fee small; submitted forms. Chas. G. Guyer, 901 Market Street, Wilmington, Del.

Geophysical Services

GEOPHYSICAL TESTS made of any Well Location in Tex. or Okla.: Crew Service $45; Via Express $20 by following our directions. Geological Scientific Service Co., 957 Davis, Ft. Worth, Tex.

Leases—Production

CORE DRILLING
Let us figure with you. No job too big, too small or too far.
CENTRAL CORE DRILL CO.
HUTCHINSON, KANSAS.

LARGE block of leases for sale in Saunders County, Nebraska, wildcat field. Test well now drilling on well-defined structure located by magnetometer, core drill and seismograph survey. Midland Oil Co., Fremont, Neb.

FOR SALE—Leases, 10, 20, 40, 80 Ac., only ½ to ¾ mi. from new Baker No. 1 Ash just starting to drill CREWS-GAP CREEK STRUCTURE N.E. Runnels County, direct line between Goldsboro and McMillan high-gravity oil and gas pools. Geologists pronounce this largest surface structure in County. Exceptional oppor. to get close in lease of your own. Invest a little, make a lot if well hits, few acres makes a fortune. No worry, no attention required, these leases rentals paid till 1939. Price only $15 acre. Wire, phone or write order for best selections.
GEO. W. FAY
Box 581
15 Court Street, San Angelo, Texas.

GO 50-50 WITH "BUD"
With four chances to win gas or oil in stripper fields. Four producing strata above 800 feet; gas to five million or more and eight cent market. Pipe line and truck oil markets. I furnish leases, drill, give you half. Write for full data, clean-cut, definite.
H. B. Buddenborg, Osawatomie, Kans.

40 ac. NW Sec. 15-17-29, also 40 ac. NW SW Sec. 2-20-28, Eddy Co., N. M. A. R. Hewitt, 1325 Mont., St., ElPaso, Tex.

ORDOVICIAN West Texas test and several Woodbine sand and Gulf Coast wildcats now under way where you stand chance to win 10 to 50 for one. Leases, Royalties. E. CROFT, Proctor, Texas.

NEW MEXICO—My weekly scout report furnishes complete and reliable information on New Mexico developments. Send for copy. W. S. Patterson, Santa Fe, N. Mex.

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Clovis, New Mexico.

FOR LEASE Sections 12 & 13, Block A-47, Andrews County, Texas. In the heart of development close to production. Will give ten year lease $1.50 per acre, 25c per acre rental. Owner, 1611 Pierce St., Amarillo, Texas.

Patent Attorneys

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form:
"Evidence of Conception,"
Instructions "How to Establish Your Rights" and complete information FREE!
LANCASTER, ALLWINE & ROMMEL
418 Bowen Building,
Washington, D. C.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Business Opportunities

$15,000 required to exercise option on and provide working capital for a natural gas producing property in eastern field. This property is operated profitably by its Trustee. Excellent opportunity on a partnership basis. Principals only. Write W. H. S., Hudson Advertising Co., 75 West Street, New York, N. Y.

CLASSIFIED ADVERTISING

Royalties—Production

Registered Royalties and Non-Registered Royalties available to Dealers only.

CHESTER IMES

First National Building,
Oklahoma City, Okla.

I have owned and sold extensive oil royalties and leases in Texas for four years and so far have not owned or sold any leases or royalties that have not produced.

I own and will sell at this time heavily productive royalties in Van and East Texas ranging in price from $400.00 an acre up. I have one forty acre lease in Upshur County, East Texas Field on a three hundred acre farm. Three weeks ago they brought in a good well at the other end of this farm. I will sell this for $200.00 an acre or will entertain a drilling proposition.

I sold a similar forty acres sixty days ago in Upshur County, Texas, and they have since brought in a well on this forty acres making one hundred and forty barrels an hour through the choke. They will drill eight wells on the acreage and its recovery is estimated at 600,000 barrels of oil. When I sold it it did not look any better than the forty acres that I am offering at this time for $200.00 an acre.

I own and will sell ⅛ of the royalty on a 640 acre lease for $4.00 an acre on the edge of Wheeler County over the line in Collingsworth County. The Smith Brothers of McLean, Texas, are now drilling a well on this section. I am informed that the Smith Brothers have drilled a number of wells in this great field without having a single dry hole to their discredit.

I see they brought in a well in Wheeler County about ten days ago making approximately 5,000 barrels.

I own several hundred acres of royalty in Marion County, Mississippi, participating in the rentals under the Sun and Texas Companies. This royalty pays 9⅜% in advance from the rentals. I will sell for $3.00 an acre and pass on to the buyer the rentals which I have already collected for this year. Virtually all of the major companies are making a play in Mississippi, and there are several wells being drilled in the section where my royalty is located.

All of these offerings are subject to prior sale and change of price. Will furnish complete data, geological reports and Governmental reports on any of them inquired for.

I buy royalties and leases in Texas and Oklahoma in any amounts.

P. R. KNICKERBOCKER
3237 Westminster St.
Dallas, Texas.
58-1679.

PRODUCING OIL ROYALTY paying monthly income in half acres and upwards at reasonable prices. Federal listed. S. J. Jewell, P. O. Box 35, Tulsa, Okla.

HIGH GRADE producing oil and gas royalties offered to dealers. Billie Smallwood, P. O. Box 2261, Tulsa, Okla.

Royalties—Production

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

Van—East Texas—Louisiana Royalties
Bought—Sold.
WILLIAM MONROE LAYTON
67 Wall St., Suite 1510, New York City.

GULF COAST ROYALTIES
Bought and Sold.
Producing and non-producing royalties in salt dome fields of Texas and La.
ZENI OIL COMPANY
412 Esperson Bldg., Preston 4420.
Houston, Texas.

BROKERS — SALESMEN
Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. Complete set of Forms and Reports for filing with Securities and Exchange Commission accompanies every order. Inquiries invited.
B. D. BUCKLEY
Paul Brown Bldg., St. Louis, Mo.

J. A. WOLF AND COMPANY
105 West Adams Street
Chicago, Illinois
Dealers in Oil Royalties since 1918.

OIL REPORT SERVICE
Specimen and Particulars on Request.
OIL INFORMATION BUREAU
501-04 Petroleum Bldg., Okla. City, Okla.

VAN POOL — EAST TEXAS
Bought — Sold — Wholesale.
W. R. Brown & Co., Inc.
14 Prospect St., East Orange, N. J.

Royalties—Production

HAVE MARKET FOR
SUBSTANTIAL
PRODUCING ROYALTIES

Exceptionally high immediate return not essential—prefer properties partially developed with excellent future — must be priced right.

We file all requirements with Federal Securities Commission and convert your royalties into cash promptly.

JAMES B. McANALLY
Tulsa, Oklahoma.

OIL DRILLERS interested in wildcatting requested to write Stoll Oil Refining Co., Louisville, Ky., for copy of free map showing promising territory based on faults in Kentucky.

PRODUCING OIL ROYALTIES
Bought (Wholesale) Sold.
Inquiries invited from Oil Companies, Bankers, Dealers.
M-K OIL COMPANY, INC.
20 Broad St. New York.

DEALERS — SOMETHING NEW

A $30,000 "open end" Trust, units of $25, with Non-Producing Properties exclusively, not registered. For full information including distributing terms, write
CERTIFIED ROYALTIES
CORPORATION
527 Fifth Avenue
New York, N. Y.

ROYALTY ON several tracts near Pushmataha County and McCurtain County wildcat wells for sale at One Hundred Dollars for half royalty on forty acres. Luther Calahan, Idabel, Oklahoma.

Royalties—Production

PRODUCING OIL ROYALTIES
at Wholesale.
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Union Nat'l Bank Bldg.
Wichita, Kans.

BETTER CLASS
MONTHLY PAYING ROYALTIES
Quoted Dealers Exclusively.
W. E. COOK
Suite 812, Palace Bldg., Tulsa, Okla.

Producing Oil Royalties
at wholesale.
ROBERT L. KINKAID, INC.
Petroleum Bldg., Oklahoma City, Okla.

PRODUCING OIL ROYALTIES
for dealers.
H. P. BOWEN
842 Kennedy Bldg., Tulsa, Okla.

PRODUCING OIL ROYALTIES
(ALL FIELDS)
Bought, Sold and Quoted.
HENRY L. BAKER CO.,
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Los Angeles, Calif.
Telephone Trinity 7391

Income Producing Royalties
Mid-Continent Field
Harry A. George
427 Perrine Bldg., Oklahoma City, Okla.

DEALERS IN ODD LOTS
EAST TEXAS AND VAN POOL
PRODUCING OIL ROYALTIES
We Buy and Sell.
E. T. MARION REAL ESTATE CO.
401-2 Slaughter Bldg.,
Dallas. Texas.

CALIFORNIA OIL ROYALTIES
Dealers Only
Signal Hill—Huntington Beach
Kettleman Hills
RICHARDS & COMPANY
650 So. Spring St., Los Angeles, Calif.

WRITE W. P. Harley, Bowling Green, Ky., for drilling propositions in proven shallow territory—Turn-Key job.

NEW MEXICO, choice landowners' perpetual royalties in Lea County close to activity under major company leases. Just off the press, Lea County ownership map in 3 parts, $1.00 each. Roy G. Barton, Clovis, N. Mex.

CALIFORNIA
OIL ROYALTIES
Long Beach Field, Los Angeles County, California.
NEW YORK FINANCIAL &
COMMUNITY CORP.
144 East 86th St.
New York, N. Y.

ROYALTY and Leases, Wheeler and Gray Counties, Texas. For quick direct dealers get in touch with
E. B. REEVES,
Lock Box 475, McLean, Texas.

11.812 ACRES all in one body in Pushmataha County. Railroad runs through East side of land. Two 5-room houses on railroad, one set improvements about center of land. Timber from 10 inches up cut 1922. Timber worth price of land. 400 acres bottom in cultivation, under hog-wire fence, 1000 to 1500 Creek bottom land. Practically half of land could be cultivated if cleared. There are no leases or contracts of any kind. All royalty goes with the land. Watered by three Creeks, plenty of fish. Good title and taxes paid to date. No trades. $4 per acre. Luther Calahan, Idabel, Okla.

CLASSIFIED DISPLAY RATES

Classified Display Advertising is set with a border and may be used in one or two column sizes. Ten point text capitals are allowed; larger type not accepted.

1 Inch	*1 time*	*$5.00*
1 Inch	*13 times*	*4.50 per inch*
1 Inch	*26 times*	*4.00 per inch*
1 Inch	*52 times*	*3.50 per inch*

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

CLASSIFIED RATES

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line. PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*
6 Lines	*2.10*	*3.60*	*5.10*	*6.60*

	1 time	2 times	3 times	4 times
7 Lines	*$2.45*	*$4.20*	*$5.95*	*$7.70*
8 Lines	*2.80*	*4.80*	*6.80*	*8.80*
9 Lines	*3.15*	*5.40*	*7.65*	*9.90*
10 Lines	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
TULSA, OKLAHOMA

OIL YEAR BOOK 1935

The 1935 issue of the "Oil and Petroleum Year Book," compiled by Walter E. Skinner, published annually for 26 years, just issued, covers 458 pages and gives complete and up-to-date particulars concerning 678 companies engaged in producing, carrying and marketing oil, financing oil development, or directly associated in any way with the oil industry in all parts of the world.

Lists are given of the officials of the companies, 2,512 directors, 338 secretaries and 198 consulting engineers, managers, agents, etc., their names and addresses.

The particulars of each company include location of property or description of business, purchase consideration, oil production, capacity of refineries, capital, dividends and financial position as disclosed by latest accounts.

Statistical tables show the world's production of crude for nine years ended December, 1934, monthly production for 13 months ended April 30, 1935, of the principal British companies, list of 598 trade names of petroleum products marketed by the various companies, and a glossary of 135 technical terms and words.

The book is published by Walter E. Skinner, 15, Dowgate Hill, Cannon Street, London, E.C.4. Price 7s. 6d. net, or, post free (abroad), 8s. 6d.

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Newly Elected Treasurer of New Jersey Standard

R. P. RESOR

Who has been elected treasurer of Standard Oil Co. (New Jersey) in succession to Christy Payne, retired.

Kansas Fields

(Continued from Page 77)

Slick, Pryor & Lockhart's No. 3 Orth, SW SW NE Section 27-18-10w, had 44,522,000 feet of gas at a total depth of 2,945 feet. It had 1,030 pounds rock pressure. Kansas City lime was topped at 2,845 feet.

Vickers Petroleum Co. and others' No. 1 Gouldner, a wildcat, SE NE NW Section 16-18-9w, had Siliceous lime at 3,224-29 feet and the hole filled with oil in 16 hours, thus opening a new productive spot in Rice County.

Keith and others' No. 3 Volkland, SW NE SE Section 20-19-9w, produced 645 bbls. of oil in 24 hours from Siliceous lime at 3,227-59 feet, total depth and was then acidized.

Magnolia Petroleum Co.'s No. 4 Beyers, NE SW NW Section 21-19-9w, pumped 120 bbls. of oil in two hours from Siliceous lime at 3,228-33 feet.

Smith, Ash & Phillips' No. 3 Beyers, SW SE NW Section 21-19-9w, was acidized in Siliceous lime at 3,273-95 feet and pumped 60 bbls. of oil and 112 bbls. of water in 24 hours.

Shell Petroleum Corp.'s No. 5 Tournear, NW SW SE Section 29-19-9w, was not helped much by an acid treatment in Siliceous lime at 3,228-74 feet, total depth, and stood with 600 feet of fluid in the hole.

Empire Oil & Refining Co.'s No. 7 Proffitt, SW SW SE Section 6-20-9w, which was a hole full of water from Siliceous lime at 3,416-19 feet, total depth 3,588 feet, was plugged back to 1,042 feet.

Gypsy Oil Co.'s No. 1 Smith, NE cor. Section 16-20-9w, swabbed 190 bbls. in seven hours from Siliceous lime at 3,223-29 feet.

McPherson County

Dickey Oil Co.'s No. 4 Tull, SE SE SW Section 13-19-3w, McPherson County, had Chat at 2,960-3,001 feet, which was acidized. It pumped 135 bbls. of oil and 25 bbls. of water in 24 hours and was completed.

Derby Oil Co. and others' No. 5 Neufeldt, NW NE SW Section 21-21-3w, was completed in Siliceous lime at 3,490-98 feet. It pumped a potential production of 188 bbls. of oil per day for three days, but also produced 80 bbls. of water per day.

McPherson Oil & Gas Co. was moving in material for No. 1-A Chindberg, SW SW NE Section 32-18-2w, a twin; Ogden Brothers were rigging up No. 1-A Chindberg, NE SE NW Section 18-19-2w, to deepen it from 3,017 feet.

Reno County

Sinclair Prairie Oil Co.'s No. 4 Harner, NE SE SW Section 14-23-4w, in the Burrton Pool, Reno County, which had a hole full of water from Siliceous lime at 3,807-12 feet, total depth 3,825 feet, was plugged back to Chat at 3,260-65 feet and completed. It produced 10,000,000 feet of gas and 4 bbls. of oil in 24 hours.

Olson Oil Co. and Shell Petroleum Corp.'s No. 2 E. Krehbiel-B, C E half W half NW Section 26-23-4w, was completed in Hunton lime at 3,581-91 feet, total depth. It was good for 888 bbls. in 24 hours.

Barnsdall Oil Co.'s No. 2 Sabin-C, SW NW SE Section 11-23-4w, an old well, total depth 3,786 feet, was plugged back to 3,726 feet and was being rigged up to deepen.

Butler County

Vickers Petroleum Co.'s No. 1 Hughes, 660 feet from south and 440 feet from west lines of NW quarter Section 36-24-3, deepened from 2,719 feet to 3,290 feet, had a hole full of water at 3,240-53 feet, and was abandoned.

El Dorado Refining Co.'s No. 1 Huston, SE SE NW Section 1-25-3, had Mississippi lime at 2,675-90 feet. It was acidized and the well made a four-day average of 233 bbls. of oil per day and was completed.

Vickers & Sanford's No. 2 Joseph, 660 feet from north and 440 feet from east lines of NW quarter Section 2-25-3, is a 40-bbl. completion in Mississippi lime pay at 2,702-10 feet, which had been acidized.

El Dorado Refining Co. had machine rigged up to start No. 1 McCraner, 660 feet from south and 440 feet from west lines of NW quarter Section 1-25-3. Phillips Petroleum Co. and others were rigged up on No. 2 Moore, NE NE SW Section 1-25-3. Cosmic Oil & Gas Co. made a location for No. 54 Porter, C W half SW NE Section 1-26-4, in the old Towanda Pool.

Sedgwick County

Dickey Oil Co. had rig built for No. 2 A. Cook, NW SE NW Section 20-28-1e, in Sedgwick County.

Greenwood County

Oko Oil Co.'s No. 1 Lovett & McNeill, SE SE SW Section 22-23-13, Greenwood County, was completed as a 25-bbl. initial producer at 1,733-65 feet.

Markus and others' No. 6 Smith, NW NW NE Section 6-24-12, was a 100-bbl. initial producer, completed in sand at 1,732-1,805 feet, which was shot with 265 quarts.

C. Nye's No. 1-A Morgan, NW NE NW Section 7-24-12, was completed in Mississippi lime pay at 1,790-91 feet and made a 17-bbl. well.

Cowley County

Connell & Patton's No. 2 Higginbottom, NW SW SW Section 29-31-6, Cowley County, swabbed and flowed 310 bbls. in 24 hours from sand at 2,877-2,939 feet, which had been given a 60-quart shot. It was completed.

Moore and others have rig up for No. 1-A Radcliff, NE NW SW Section 4-33-7 (correction).

Elk County

Griffin & Bell's No. 1 Silger, NE SE SE Section 25-30-10, a wildcat in Elk County, was completed. It is good for 35 bbls. a day in its early stages from lime at 1,314-20 feet.

CANADIAN GAS ASSOCIATION

QUEBEC, Province of Quebec, June 15. At the Canadian Gas Association's twenty-eighth annual convention this week John Keillor of Vancouver, British Columbia, was elected president. Other officers were: First vice president, W. H. Munro, Montreal; second vice president, E. J. Tucker, Toronto; secretary-treasurer, G. W. Allen, Toronto.